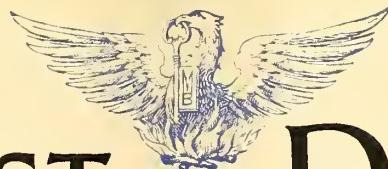


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VOL. CXVII.

DECEMBER 31, 1932

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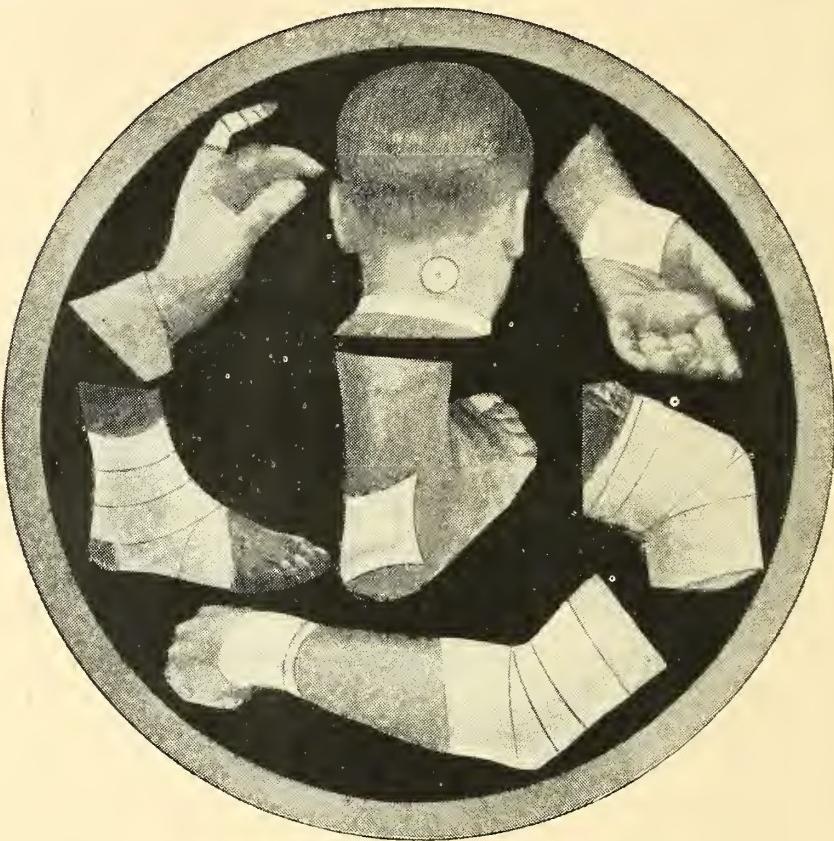
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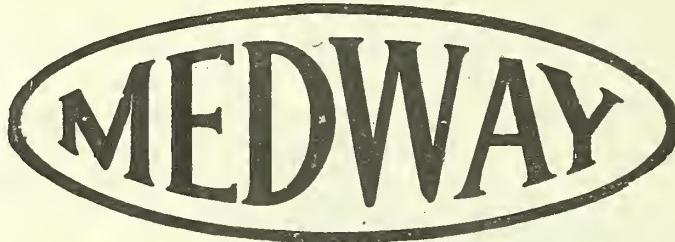
have pleasure in announcing that as and from JANUARY 1st, 1933, all its products will be marketed under a Registered Trade Mark and in containers of distinctive colours : e.g., Packages containing :-

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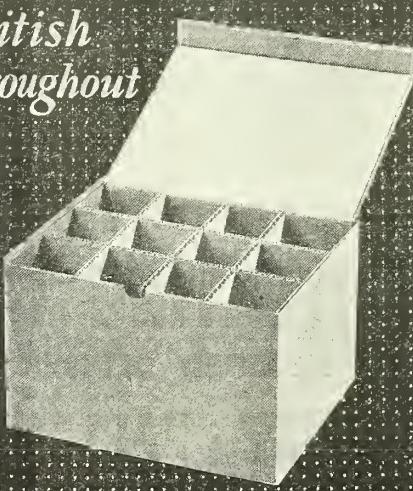
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Send a postcard to Southport NOW and you can have a Bob Martin Display working for you within 24 hours.

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*Dog Food and Medicine Manufacturers since 1892.*



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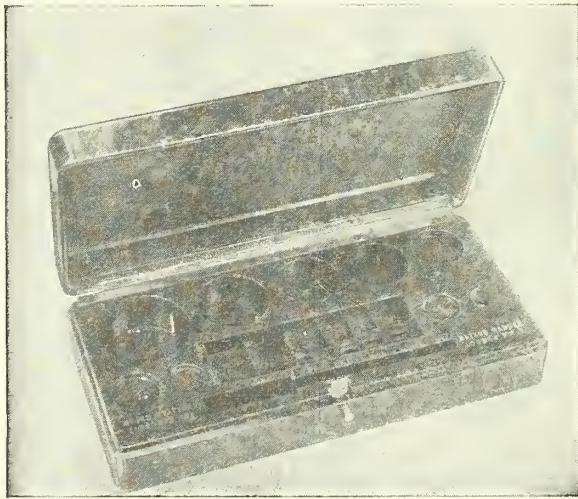


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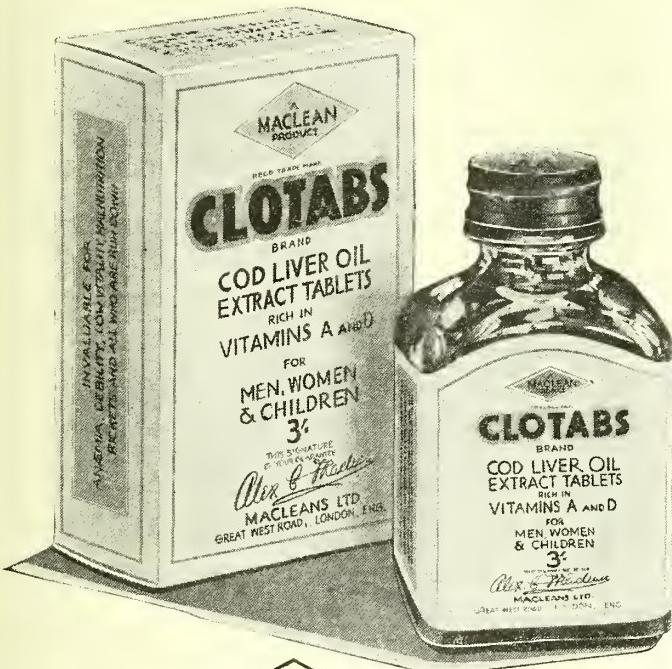
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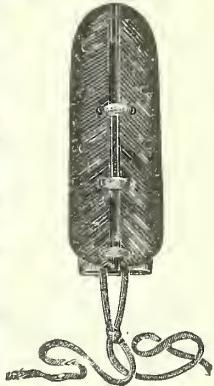
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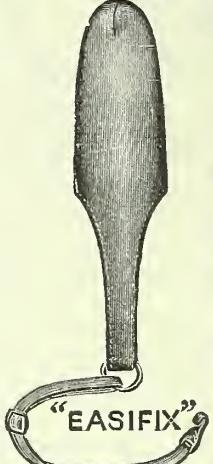
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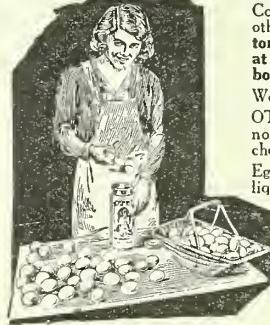
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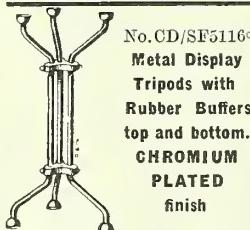
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A safe, simple and reliable remedy for Children's Ailments is advertised so extensively in the daily and weekly Press as to bring mothers to the retailer without effort on his part.

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**ZEAL**

-the name the public knows.

G. H. ZEAL, LTD.,  
75 & 77, St. John St., London, E.C.1.

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Counter

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1000 sheets to the Roll.  
5/6 per dozen carriage paid.

**WALDORF**—a soft and absorbent Roll.

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As a qualified Chemist  
YOU should recommend  
these New Health-  
Giving Outfits to  
your  
Customers!

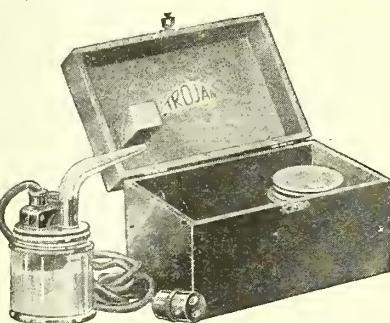
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OUTFIT



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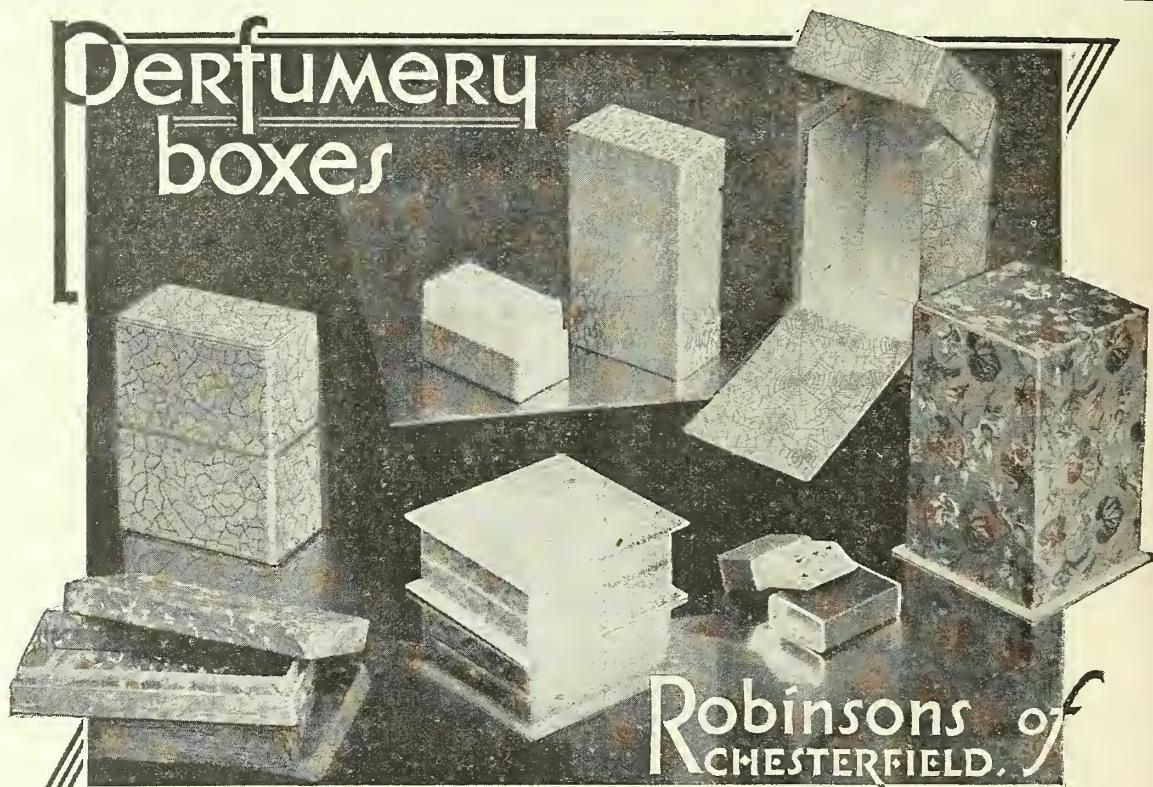
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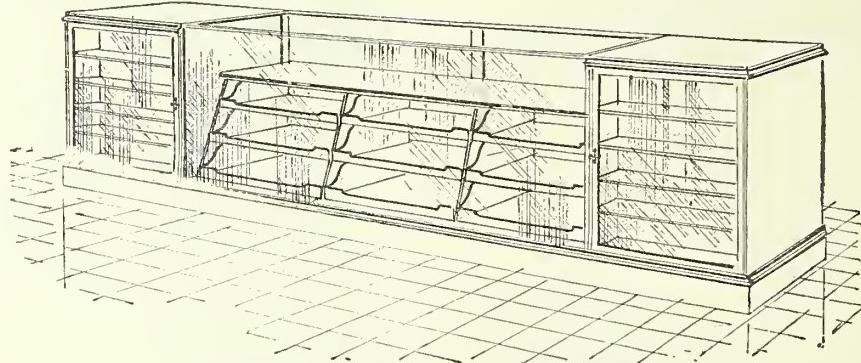
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FIXED  
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12" x 8" size

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EACH

Obtainable through  
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Seven reasons that make the 'Pharmaf' the best seller in Hot Water Bottles :—

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An Outstanding Product

Distillation of Clove Oil was undertaken at Cowper Street about 1833, and StaffAllenS product has maintained the world-wide reputation it acquired ever :: :: since :: ::

Write for sample  
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Essential Oil Distillers, LTD.

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I haven't much time for writing to Manufacturers and giving a word in praise when due, but as regards your "SPECIAL 890" LIQUID PARAFFIN I feel I must. The bottle and general finish, and that little detail of having all bottles priced, leaves nothing to be desired. All that, and the splendid profit, and the good window show material, makes it well worth handling, and there is no chemist that can pack and turn it out in such a style as you have done. Your pack is the last word in presentation to the public. It looks what it is, really Medicinal.

**LEAVES NOTHING  
TO BE DESIRED  
A SPLENDID  
PROFIT  
WELL WORTH  
HANDLING**

*Act on a fellow Chemist's opinion!  
Send for full particulars of contract  
terms of packed and bulk, NOW!*

**SPECIAL BULK OFFER** To every customer who buys or contracts for 40 Gallons of "SPECIAL 890," to be taken within 12 months in not less than 10 Gallon deliveries, we are giving a waste eliminator, in the shape of a NEW DRUM STAND and TILTER. Extremely useful and an asset to every Chemist. ORDER NOW!

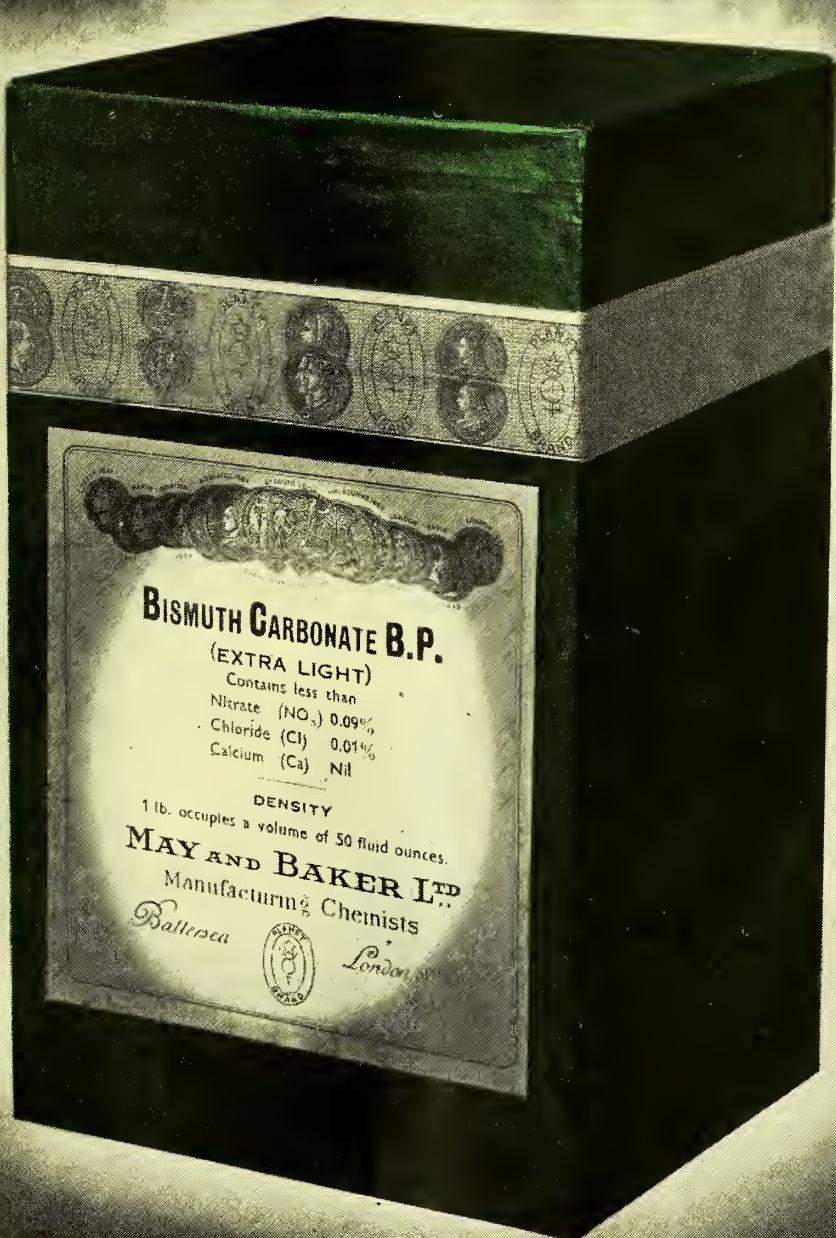


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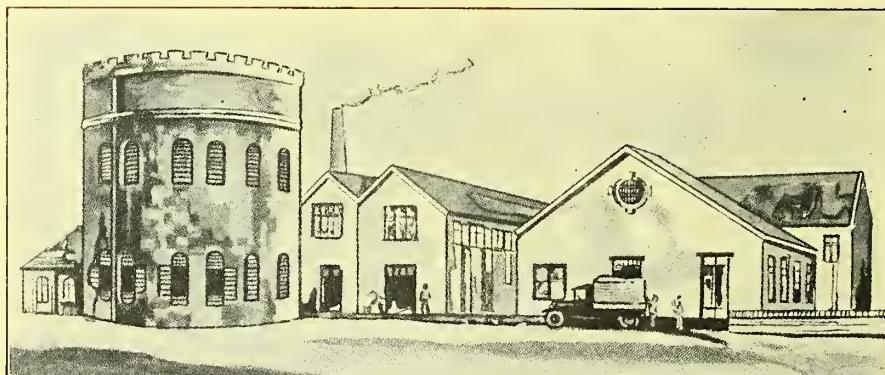


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M. & B. Bismuth Carbonate*

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# mysore sandalwood oil



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at MYSORE.*

DISTILLED IN GOVERNMENT FACTORIES

## GUARANTEED B.P. and U.S.P. STANDARDS

WITH the advent of a New British Pharmacopœia, in which has been incorporated a monograph on Australian Sandal Wood Oil in addition to that describing the East Indian Oil, and in order to dispose of any mistaken idea that may exist with regard to the possible substitution of one for the other, it is desirable that a few comments upon the relative merits of these two products should be addressed to purchasers of the oils.

The East Indian Oil of *Santalum album* Linn. is still officially under the titles of Oleum Santali and Oil of Sandal Wood with the abbreviation Ol. Santal; consequently when an oil is ordered by either of these names the East Indian product is the only one which may be legally supplied. The New Pharmacopœia still maintains the high standard of purity for Sandal Wood Oil as laid down by the B.P. 1914, with a content of not less than 90 per cent. *w/w* of free alcohols, calculated as santalol  $C_{15}H_{24}O$ .

It is a well-established fact that the medicinal value of the oil as an antiseptic and antiphlogistic remedy in certain diseases is entirely due to its high santalol content, which in the Mysore Oil reaches an average of about 92 per cent. This santalol has been subjected to careful examination by a number of authorities, with the result that it is now known to consist of a mixture of two isomeric sesquiterpene alcohols,  $\alpha$ -santalol and  $\beta$ -santalol.

The composition of the West Australian Oil, on the other hand, has by no means been definitely ascertained, although it has been examined by a number of workers. This oil is obtained from the wood of an entirely different tree, *Eucarya Spicata* (Sprague and Summerhayes), and has been found to contain a mixture of sesquiterpene alcohols, only a portion of which has been identified as santalol.

It is in perfumery that the greater proportion of Sandalwood Oil is employed at the present day; and to discriminating buyers, such as perfumers and soap manufacturers must of necessity be, it is hardly necessary to extol the virtues of the East Indian Oil which is without equal, both as a fine perfume base and a fixative for the increasingly popular bouquets of the oriental type. In addition, it is now being used extensively, and with marked success, in the creation of some of the more delicate perfumes in which the Sandalwood odour is not required as a predominant character.

The West Australian Oil yields entirely different results and is not suitable for replacing the true East Indian Oil. A few trials will convince the perfumer who has not taken full advantage of the odour-value of this oil, that it is of the greatest use to him, not only for the predominant Sandalwood odour where required, but also as a modifier and fixative for other odours. This is true for liquid perfumes, soaps, creams, powders and all other cosmetic preparations. It will be found invaluable to those up-to-date perfumers who pride themselves on their own "creations."

The wood of the Sandalwood tree has been in use in India and China from very ancient times, on account of its delightful fragrance and its antiseptic properties, and it is safe to predict that the oil distilled from it will still hold its own in the Orient and in Western countries alike, so long as first-class perfumes continue to be demanded by the public.

The methods of distillation and control adopted in the factories of the Mysore Government are such that buyers may rest assured that every consignment of East Indian Sandalwood Oil received by them will be of practically identical composition.

DISTILLED IN MYSORE IN THE

## mysore government sandalwood factory

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as an aid to  
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The following dates have already been fixed :  
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July 29th, Sept. 30th, Dec. 9th, and the Diary for 1934

**THE CHEMIST & DRUGGIST**

28 ESSEX STREET, STRAND, LONDON, W.C.2  
CENTRAL 6565 (8 lines)

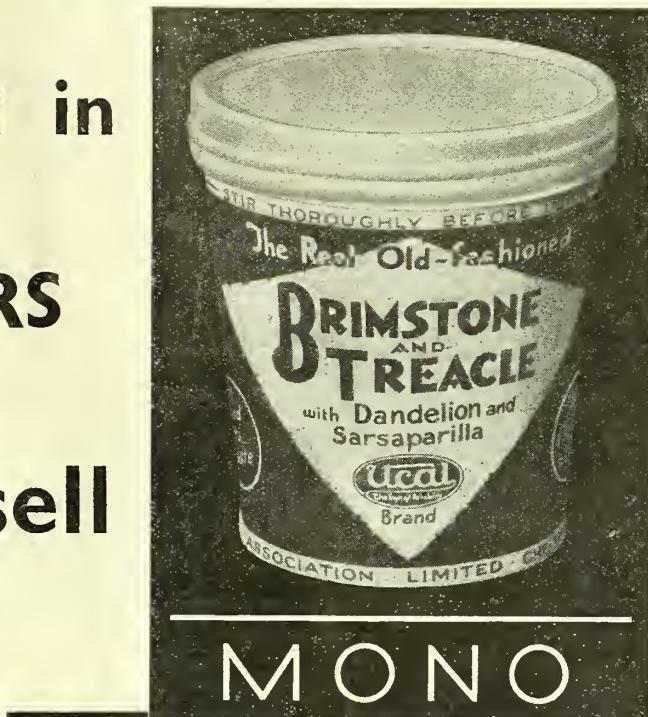
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MONO  
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**MONO**



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**the more  
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less cost**

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Virus for Rats and Mice, single tube, 2/- 3 tubes, 5/-	15/- per doz.
Virus for Mice only .. single tube, 1/6 3 tubes, 3/-	9/- ,

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### Danysz Virus in Liquid Form

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Pint " 4/6 "	3/9 "

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Retail	Monthly A/c	Cash with Order
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" 80/-	60/-	53/4

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Retail Prices (Protected)			Wholesale Prices per doz.		
In tins 3d. ..	..	..	In boxes of 2 doz.	2/1	
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" 1/- ..	..	..	" 1 "	7/3	
" 2/6 ..	..	..	" 1 "	18/-	

Danzo Beetle Powder will not deteriorate by keeping.  
**CARRIAGE PAID ON ALL ORDERS.**

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*Protected Prices  
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## Remedies for the Horse



## HARVEY'S

Koppos Powder.  
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**HARVEY & COMPANY, Ltd., Dublin**

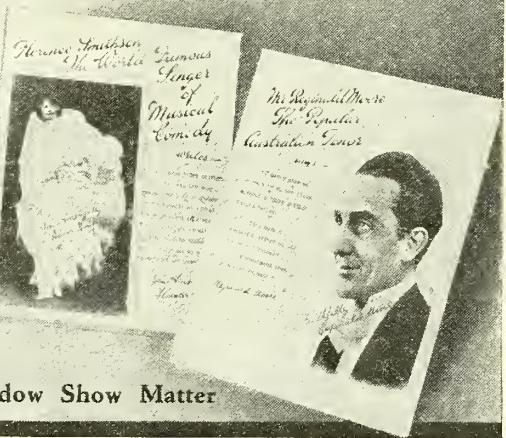
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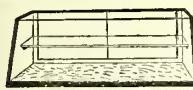
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"Tenz" Antiseptic Tablets instantly remove all odours from the breath. There is a universal demand for this line. Keep the dainty Display Box on your counter, and get your share of the sales. Sells at 3d. per tube and shows big profits. Order direct or from your usual Wholesaler.

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*In 4 oz., 8 oz., 1 lb., 4 lb. and 7 lb. cartons*

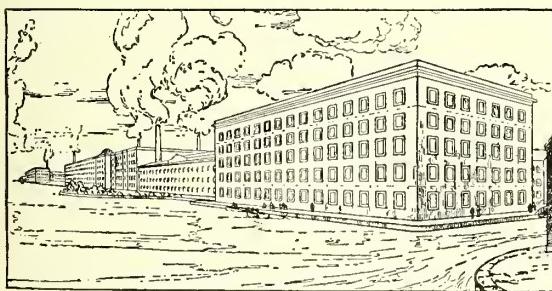
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**SODIUM SALICYLATE, B.P.**

*Physiologically Pure*

When dissolved in water, forms a water-white solution which shows no darkening in 24 hours.

*In 1 lb., 4 lb., and 7 lb. cartons (Powder or Flake)*



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# THE CHEMIST AND DRUGGIST

A Weekly Journal of Pharmacy, the Drug, Chemical and Allied Trades

*The official organ of The Pharmaceutical Society of Ireland,  
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VOL. 117. NO. 2760

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## News of the Week

### Import Duties Act, 1932—Additions to Free List

The Import Duties Advisory Committee on November 30 recommended H.M. Treasury to add the undermentioned articles to the Free List under the Import Duties Act, 1932, and on December 21 the Treasury issued Exemption Order No. 5 authorising the free import of these classes of goods on and from December 29, 1932.

Manila hemp (*Musa textilis*) not further dressed after scutching or decorticating; tow of manila hemp (*Musa textilis*).

Iron bromide.

Bristles of the pig, hog or boar imported in bundles or bunches which consist exclusively of such bristles and in which the bristles are laid parallel, excluding bundles or bunches which are in a state ready, or substantially ready, for incorporation in a brush or broom.

The following articles of a size and shape adapted for use in articles of jewellery or imitation jewellery, not mounted, set or strung, viz.:—

Artificial pearls.

Non-precious and imitation stones including those made of glass.

Imitations of tortoiseshell, mother-of-pearl, amber or coral.

Beads made of the above-mentioned materials or of shells, seeds or bones.

Foreign Patent Office specifications.

Tantalum metal in the form of powder, sheet, plate, bar, wire or tube, but not including alloys of tantalum.

### Contracts

The following tenders have been accepted by the bodies named:—

Bridlington Education Committee.—Mr. L. M. Hedley, chemist and druggist, drugs, etc.

Gravesend Education Committee.—Gillitt & Son, chemists, drugs, etc.

Great Yarmouth Corporation.—Mr. T. J. Woodcock, chemist and druggist, drugs, etc.

Guisborough Urban Council.—Mr. J. W. Frank, chemist and druggist, drugs, etc.

Whitby Education Committee.—Mr. C. Tindale, chemist and druggist, drugs, etc.

### Birmingham

Measles and mumps continue to be prevalent among local school children.

A medical service, based on a low weekly subscription, which has been in operation in King's Heath and Hockley districts for many years, is to be extended to the whole of the city.

### Miscellaneous

INQUEST.—At Weybridge, recently, an inquest was held on the body of Mr. George Masterton, chemist and druggist, a branch manager. The verdict was that death was due to poisoning by hydrocyanic acid, and that the poison was self-administered.

WINDOW-DRESSING AWARDS.—At the recent shopping week window-dressing competition held at Sandown, Isle of Wight, the first prize in the class open to chemists was awarded to F. Woollings & Son. Mr. L. T. Salt, Ph.C., was highly commended.

FORGED MEDICAL CERTIFICATES.—At Northampton, on December 28, William J. Rowles, a panel patient, was charged with defrauding the local Insurance Committee by obtaining 136 bottles of medicine in twenty-two weeks by means of forged medical certificates. It was stated that the medicine contained morphine. The accused was placed on probation.

CONVEYANCE OF PETROLEUM SPIRIT.—The Petroleum-Spirit (Conveyance) Regulations, 1932 (S.R. & O., 1932, No. 1052: Stationery Office, 2d.), have been issued by the Home Secretary, and will come into force on February 1 next. They provide for the conveyance of petroleum spirit in tank wagons or otherwise, and comprise twenty-eight clauses and a schedule.

C C \*

## Irish Notes

### False Trade Description

At Belfast Police Court, on December 23, Mr. Isaac Davison, Ph.C., High Street, Portadown, sued Mr. Robert Ross, Willowholme Drive, Belfast, under the Merchandise Marks Act, for having unlawfully applied to certain medicinal powders, contained in coverings, a false trade description, to wit, "Mrs. Cullen's Powders," with a statement that such powders were manufactured by Cullen & Rawdon, chemists. Mr. Marrinan, for the prosecution, said that Mr. Davison carried on an extensive business as a chemist in Portadown, and had for many years been putting on the market Mrs. Cullen's Headache Powders. These powders were invented by himself and sold in packets, on which were printed the names "Cullen & Rawdon." Mr. Davison traded as Cullen & Rawdon, and had been producing these powders for twenty-two years. They were bought extensively all over the British Dominions. Some time ago a headache powder got up in packages resembling Mr. Davison's was put on the market, and to protect his interests he had to take proceedings in Chancery. He got an injunction. Later, he discovered that another powder was being put on the market bearing a label almost identical with his own. When analysed it was found that this powder contained an imitation of the complainant's prescription—not quite the same—but only one-third the weight of Mr. Davison's powder. The defendant admitted the offence. Mr. Marrinan said they did not press for a penalty. The defendant was dealt with under the Probation of Offenders Act, on undertaking not to repeat the offence, and the summons was dismissed.

### Brevities

Chemists in Dublin, Cork, Waterford, Limerick and other important centres in the Free State have reported good seasonal business.

A correspondent (23/12) writes:—"The late Mr. Whelan, whose death was recorded in the *C. & D.* of December 24 (p. 766), was a keen sportsman and a shrewd student of the turf. His house, 'Ard Patrick,'

was named after a horse of that name. He was a member of the Galway Race Committee, the Galway Golf Club, and several other sporting organisations in the city. No more genial or kindly companion than John M. Whelan could be found. Mr. Whelan is survived by his widow, four sons and three daughters. The interment took place at the New Cemetery, Galway, and was attended by a large and representative concourse of people."

At the Northern Ireland Winter Assizes at Downpatrick, on December 3 and December 20, Bernard McElhinney, described as a medical doctor, was the defendant in a charge of fraudulently converting to his own use £5 entrusted to him by Fanny Hassan, Duniven. Miss Hassan said prisoner called on her on September 21. He told her that if she had some of his medicine she would be all right. She said she had a £5 note. The accused took it, saying he would go down the road to change it, and left her. She had received neither the change nor the medicine. On December 20, Lord Justice Andrews said the accused had been in jail for practically two months, and he thought that the proper course to adopt was that, on his return to Belfast, he should be released to come up for sentence if called upon. The accused had friends in Liverpool who were willing to assist him.

## Scottish Notes

### Brevities

The new factory of Askit, Ltd., at Saracen Street, Glasgow, was opened by the Lord Provost on December 21.

Mr. William Cumming, chemist and druggist, has been re-elected president of the Thurso Merchants' Association.

At Paisley Sheriff Court, on December 20, Mr. David Hendry, chemist and druggist (David Hendry, Ltd., chemists, Canal Street), was fined £10 for failing to record in a dangerous drugs register certain drugs obtained and certain drugs dispensed. It was stated that the omission was due to carelessness.

# Topical Reflections

By Xrayser

### Orderly Presentation

of matters is always characteristic of *The Chemist and Druggist Diary*, but I was never so much struck by this fact as when making my preliminary survey of the literary contents of the latest issue of this most comprehensive work of reference. Everything seemed to be so thoroughly up to date as the pages were turned, and one interesting feature after another disclosed itself, and it was suddenly brought home to me at the end of the survey how many important changes have taken place this year in matters which closely affect chemists and druggists. The well-displayed advertisements help one to obtain a proper perspective of the course of events, besides rendering available a multitude of facts which are not only relevant but also essential to the efficient conduct of our business. Taken as a whole, the new *Diary* supplies as good an answer as can be conceived to the question "What is the business of a chemist and druggist?" and its varied contents render it manifest how many-sided must be the intellectual equipment of those who conduct that business successfully. It is good to feel that the practical value of our day-by-day desk companion remains unabated, and that such a mass of technical information as it contains has been presented in a form which encourages appreciation of the importance of our occupation in the world of to-day.

### The New Pharmacopœia

is the subject of an admirable and helpful analytical survey in your new *Diary*, and it has been ably discussed from the pharmacist's point of view by Mr. R. V. Lloyd (*C. & D.*, December 24, p. 765). He sees in the book an excellent indication of the present-day trend of pharmaceutical practice, and recognises the undoubtedly fact that it is not a "manufacturer's B.P.," inasmuch as it tends to encourage prescribing which should increase extemporaneous pharmacy. What Mr. Lloyd told his listeners about this tendency in the direction of specific medication for patients under treatment is worthy of the closest attention by pharmacists in general practice, but it must be recognised that the tendency does not yet manifest itself to a very marked degree in ordinary medical practice. I should expect to find a very small proportion of the medical prescriptions now written day by day ordering solutions or other preparations which require to be compounded extemporaneously, and it is notorious that the general practitioner is more often than not the reverse of conversant with the pages of the British Pharmacopœia. But doctors should be induced to study the Pharmacopœia, and base their prescribing thereon, and chemists regard it as a point of honour to refrain from sending prescriptions ordering special preparations to wholesale houses for the compounding to be done.

# British Pharmacopoeia, 1932

## Corrigenda in the First Issue (September 1932)

WE have received from the registrar of the General Medical Council the following list of corrections to be made in the British Pharmacopœia, 1932:—

page	line	page	line	insert;
xxxii	44	379	29	after substance
xxxvi	25	381	12	for the ether
14	11	381	22	for limit
14	11	384	2	for It contains not less than 98 per cent. of the pods de- scribed below.
		389	10	for 10
		389	23	after grammes
51	24	391	25	after grammes
52	20	394	18	for 5
54	2	395	17	for 5
57	28	428	21	for $\frac{1}{120}$
63		443	14	after sulphate ...
65	33	445	11	for temperature
77	4	450	3	for represent
87	13	461	16	for Tests
104	33	461		after line 18
106	18	468	15	for Tuberculosis
	w/w	468	34	for Tuberculosis
113	24	470	21	for Soft Paraffin
131	28	471	8	for Soft Paraffin
163	14	473	19	for Soft Paraffin, yellow
164	3	485	29	for extract
164		514		after line 20
173	38	535	last	read extractive
176	33	539	39	insert for N/2 ... 28.05 grammes
179	17	579	27	KOH
192	20	581	2	read millilitres
192	20	581	15	read No. 188
192	22	616	31	read N/2
211	5	621	6	read millimetres
226	6	621	7	read 3
265	17	621	10	read biological
272	29	635	13	read millilitres
297	10	643		read represents
		668	49	read represents
		708	16	read ABNORMAL
		710	33	insert Abnormal Toxicity, Test for Freedom from ... 635
		711		read Abnormal
				read Abnormal
				By order,
				NORMAN C. KING, Registrar.
		OFFICE OF THE GENERAL MEDICAL COUNCIL, 44 HALLAM STREET, LONDON, W.I.		
		December 1932.		
		Copies printed on paper, 6 in. by 9 in., can be obtained on application to the office of the General Medical Council, 44 Hallam Street, London, W.I., accompanied by an addressed envelope. Those who desire the sheet to be kept flat should send an envelope of sufficient size for this purpose.		
		PUBLIC PHARMACISTS.—A well-attended meeting of the Guild of Public Pharmacists was held on December 21, the president (Mr. E. A. Andrews) in the chair. Dr. B. Barling gave a lantern lecture entitled <i>The Uses of New Preparations in Clinical Medicine</i> . Dr. Barling described the diseases and conditions calling for the use of lipiodal, uroselectan, glycerin, magnesium sulphate, hypertonic saline and atmospheric air, illustrating his remarks with slides showing x-ray photographs. The recent discovery of the superiority of glycerin as an antiseptic in obstetrics was explained. Dr. Barling said that as the science of medicine progressed and their problems were more readily understood, treatment became more simple and less empirical. A vote of thanks to the lecturer was proposed by Mr. H. Davis.		

## French News

From the "C. & D." Paris Correspondent.

**PROPRIETARY MEDICINES.**—The question as to whether proprietary medicines should be admitted to figure under the new insurance scheme has been much discussed. A special Government Committee, including the Dean of the Faculty of Medicine, representatives of pharmacy, etc., was nominated to study the matter. M. Radais (then dean of the Faculty of Pharmacy) was chosen to draw up the report of the Committee. This report suggested the exclusion of certain categories of proprietaries, those which were not in conformity with the law, those which seemed contrary to the interests of medicine and pharmacy, and those which were too expensive. The Conseil d'Etat, called upon to pronounce on the validity of such a document, decided that the Committee had not carried out the instructions of the Government, which were to draw up a list of desirable proprietaries, and not to submit a list of categories undesirable.

THE Law of Germinal having been passed in days when the limited company was still a thing of the future, the question of how far the exclusive right of the qualified man to deal in medicaments can be upheld in wholesale and manufacturing concerns is a frequent subject of discussion and even of litigation. In a recent case a partnership was formed for the manufacture and sale of pharmaceutical specialities between three qualified men, whose right was, of course, indisputable. But death and change occurred, so that the business finally became a company composed of two pharmacists as "responsible managers," and a certain number of non-qualified "sleeping" partners. There seems no doubt that these two pharmacists were really the sole managers, but the Court held that the "sleeping partners'" capital evidently gave them a right and a force to control the managers' actions, that non-qualified men were by law intentionally "kept out of this special business," that the antiquity of the Law of Germinal did not in any way affect its authority, and the application of the principles "which inspired the legislator," and that the company must go into liquidation.

THE "C.N.P.F."—A curious feature of the General Association of French Pharmacists is the manner in which it deals with novel propositions made by members in the interest of the trade in general. Without actual taking upon itself the moral or financial responsibility of the scheme, it patronises such propositions as seem useful and practical, and assists them by its moral and occasional financial support. The latest example is the C.N.P.F. (Comptoir National de la Pharmacie Française). During the war, many pharmacists had great difficulty in obtaining supplies. It was then that Professor Villedieu, of Tours, proposed to form an organisation to check the quality of supplies. A committee was nominated; the General Association voted 4,000 fr. for propaganda, etc. A company was formed in 1920. It was soon discovered that it would be necessary to purchase drugs and other goods, and it was decided that the company should act as commission agent. Deliveries were made in Paris, but this first year the turnover (1,700,000 fr.) principally represented orders from rural pharmacists. In 1921 the C.N.P.F. amalgamated with a "Grouped Buying Service" already formed in Paris, took up the business of commission agents in proprietaries, and quitted the drug business except so far as its country clients were concerned. The C.N.P.F. has now a capital of about 2,000,000 fr.

**PHARMACY SCENE IN A PLAY.**—The "Eocal Vert" is the title of a two-act play in which the scene is laid in a provincial pharmacy. This room is used for meals as well as for dispensing. The poison cupboard, frequently left open, stands near the dining-table, and in close proximity to sundry jars, one of which contains lozenges. When the curtain rises, Blan-

dier, the pharmacist, is prescribing for his crony the local carrier. "A potion with codeine, Frederick, you'll feel like another man to-morrow morning. We pharmacists are doctors, of a sort, of a sort that you don't have to pay. And, besides, we mustn't kill people. If we make a fatal mistake, well, we hear all about it." His attention is diverted by the evident lack of lozenges in the jar. "Armand," he calls, and his nephew and laboratory porter thus summoned, is roundly accused of pilfering in spite of his protestations of innocence. Blandier picks up the jar, and writes on the label, "For personal use only." Madame Blandier next appears, a long-suffering, lachrymose spouse. Her husband has secured the business through marrying her, his former employer's daughter, but he considers his scientific attainments (did not his professor at Montpellier term him "the modern *Aesculapius*"?) thrown away in a provincial pharmacy. When Marie the maid appears, he carries on a mild flirtation, to the despair of the jealous Armand. This young hopeful takes some arsenic from the poison cupboard, and empties it into the lozenge jar labelled "For personal use only." It is not he who eats the lozenges. Madame Blandier and Marie appear alone, and each raids the now fatal jar. A series of interruptions for a time defer the *dénouement*, but at last Marie seizes her chance to help herself freely. She is seized with violent pains, everybody rushes in, a doctor is summoned, while Blandier, in somewhat leisurely fashion, prepares an antidote. Why he seems so reflective is explained in the second act, which shows what takes place a few weeks later. He is convinced that his wife, bent on revenge, has decided to poison him. He lives in constant apprehension. The pockets of his overall are full of antidotes. He will touch nothing at table till someone else has eaten; all these unfounded fears of course affording much amusement to the better-informed audience. He proposes an amicable separation to the puzzled but doting woman. However, all ends happily. Marie recovers and goes home to her parents. Armand follows her, deciding to quit pharmacy, and when Blandier pours his doubts and fears into the sympathetic ear of his crony Frederick, the honest carrier hastens to dispel the pharmacist's depression. Armand had confessed to him his jealousy and his rash act. Blandier's joy and relief are unbounded, and the curtain falls on a touching scene of marital reconciliation, in which the pharmacist grandiloquently and generously pardons his wife for the many sins of which he had suspected her.

## National Pharmaceutical Union

### Branch Meetings

**Bournemouth.**—A meeting of the Bournemouth and District Branch was held on December 13, Mr. N. K. Phillips in the chair. The chairman expressed the pleasure of the Branch on receiving a visit from Mr. G. A. Mallinson (secretary of the Union), which had resulted in a record attendance of members. Mr. Mallinson's address, *Publicity for Pharmacists*, was well received, and approval was given to the proposal to form a publicity association. Mr. Mallinson showed that the plan of the Executive provided for keeping a control on all the advertising matter issued under the auspices of the N.P.U. Mr. F. E. Bilson proposed a vote of thanks to Mr. Mallinson.

**Leeds.**—A meeting of the Leeds Branch was held on December 13. In opening the meeting Mr. A. L. Peters (chairman) remarked that there was a slight improvement in the attendance. An address on *A Critical Review of the N.P.U. Price List* was given by Mr. J. Lancaster. The meeting was thrown open for discussion, in which most of the members present took part. Mr. H. Gillegan (a member of the Executive) proposed a vote of thanks to Mr. Lancaster.

## Excessive Prescribing

**C**OMMENTS in the medical and the public Press on the penalties imposed by the Minister of Health on practitioners adjudged to be guilty of extravagant prescribing have at times focused attention on this important question. Chemists may be forgiven for taking more than a passing interest in this matter, for the habits of doctors who prescribe for insured persons have a direct influence on the insurance chemist's remuneration. In view of statements that have been made in connection with the investigation of excessive prescribing, the fact cannot be too strongly emphasised that, whatever system may be adopted for the payment of chemists' accounts, some check or audit of the orders issued by insurance practitioners would have to be carried out because of the fact that public funds are involved.

The insured person, when he enters into his agreement with the State, is promised, among other benefits, a supply of "proper and sufficient medicine," no more and no less than that. The doctor is employed by the State to exercise, in connection with the medical treatment of insured persons, the particular skill he has acquired by special training. In so far as the expenditure of money is a result of his actions, he may be considered an agent of the State and a trustee of insurance funds. His conduct, therefore, should be such as is normally expected from any person acting in that capacity.

There was a leading article on this subject of excessive prescribing in "The Times" a little while ago, in which, after an explanatory statement regarding the methods adopted to select or discover these cases, absolute freedom of action was claimed for the insurance practitioner:—

"The real objection to charges of excessive prescribing does not rest on the methods by which they are initiated and substantiated. It rests on the fact that a doctor ought to be free to prescribe what he thinks proper. It is idle to plead that some doctors are reckless in their use of drugs or make use of costly preparations when cheaper substitutes might equally well be given, or effect needless changes of treatment at every visit. The reply must be made that the doctor in charge of a case is the only competent judge of the needs of that case. His right of judgment cannot be usurped by anybody else, not even by a committee of his professional colleagues...."

In any case, the adoption of the particular method of treatment selected should be prompted by reasons which, if disclosed to a committee of professional colleagues, would be accepted by them as sufficient justification for any abnormal expenditure. But let us examine the situation a little more closely. Is it quite correct to say that "the doctor in charge of a case is the only competent judge of the needs of that case"? Is not the fact that a particular doctor is in charge of a particular patient at the time that particular treatment is needed more or less accidental? The patient selects his doctor for various reasons, but not often because he is in immediate need of treatment. He does not usually select him because of his special skill in treating a particular disease. He might with equal reason have selected some other medical man from the list of those available to treat the insured persons in that particular area; and the selected doctor would then, in the event of illness, have become the practitioner in charge of the case. It should be remembered that the patient is only entitled to a "general practitioner" service in his medical treatment; any service he may need which is outside the competence and skill which a general practitioner may reasonably be expected to possess is not included in the treatment given under the National Insurance Scheme. Any one of the practitioners on the panel in the patient's area could, if he was in possession of all the facts concerning the onset and progress of the patient's illness, furnish the requisite treatment and prescribe the appropriate remedies. A committee chosen from the doctors practising in the area might, therefore, in a greater degree, be able to arrive at a decision as to the value of, or the necessity for, the particular remedies used in the treatment of the case by one of their colleagues. Inci-

dently, it should be noted that no case is selected for investigation merely because the practitioner occasionally issues individual prescriptions of high cost.

### Investigation of Lavish Prescribing

As a rule, on the first occasion that the evidence of his lavish prescribing is brought to the notice of the doctor he is visited by representatives of the Panel Committee; the interview ends by friendly advice being tendered to him by his professional colleagues for his future guidance, and no further steps are taken. If the case should be exceptional, however, or if a subsequent examination of the prescriptions shows that previous warnings have been disregarded, then the matter is referred to the Panel Committee for consideration. Here all the facts of the case are fully stated, a report of any interviews with the practitioner is submitted, and the doctor is invited to attend the hearing and to lay before the Committee any information which may serve to explain his action in issuing the prescriptions which are called in question. It must be admitted that in the event of a charge of extravagance being preferred against any insurance practitioner his own Panel Committee ought to be competent to judge of the needs of the case and of the suitability or adequacy of the remedies employed, especially as, in formulating their judgment, they have the additional advantage of being able to draw upon the accumulated wisdom and experience of all their individual members.

It can be seen, therefore, that no penalty is imposed in a case of excessive prescribing as a result of a merely superficial survey of the facts, or without the concurrence of a number of the practitioner's colleagues. Finally, even when a surcharge is decided upon, the amount is calculated merely in proportion to the excess cost incurred during the three months which have been reviewed. If all the circumstances attendant upon the consideration of these cases of excessive prescribing could be laid before the taxpayers they would no doubt conclude that if, after such hearing by his peers, a practitioner is found worthy of blame, the contention that he must reimburse the fund with the amount of any excess expenditure that his unjustifiable actions have caused is only just and reasonable.—ONLOOKER (30/9).

## Trade-Mark Applications

The figures in parentheses refer to the classes in which the marks are grouped. A list of classes and particulars as to registration are given in "The Chemist and Druggist Diary," 1932, p. 339.

(From "The Trade Marks Journal," December 21, 1932.)

- "FEMINOSAL"; for all goods (3). By Kaydor, Ltd., 30 Howland Street, London, W.1. 528,440.
- "LEUKOPLAST"; for medicated plasters (3). By Beiersdorf, Ltd., Borssemer Road, Welwyn Garden City, Herts. 532,711. (Associated.)
- "BEXOLAN"; for pharmaceutical preparations (3). By Marie A. J. E. Béjean, 134 Avenue Malakoff, Paris. 535,058.
- "PARAMOUNT"; for medicated confectionery (3). By A. C. Dutton, Ltd., 42 Main Road, Denholme, near Bradford. 535,413.
- "VIONASE"; for cod-liver oil and cod-liver oil preparations (3). By Wilcox, Jozeau & Co. (Foreign Chemists), Ltd., 15 Great St. Andrew Street, London, W.C.2. 535,858. (Associated.)
- "MAGASPRIN"; for medicinal preparations of acetylsalicylic acid (3). By Ayrton Saunders & Co., Ltd., 34 Hanover Street, Liverpool. 536,025.
- "NEMGA"; for perfumery, etc. (48). By S. J. Beale, 7 Melbourn Street, Royston, Herts. 535,283. (Associated.)
- "ADMIREEN"; for toilet cream for the hair (48). By Domec Products, Ltd., West Shore Road, Poole, Dorset. 536,309.

# Pharmaceutical Society of Ireland

## Council Meeting

THE December meeting of the Council was held at 67 Lower Mount Street, Dublin, on December 13, Mr. P. Brooke Kelly (president) in the chair. Other members of the Council present were: Mr. D. W. P. Boyd, Mr. J. F. Costello, Mr. C. Cremen, Mr. J. T. Dwyer, Mr. P. J. Fielding, Mr. F. J. Fitzpatrick, Miss F. M. Flood, Mr. J. Gleeson, Mr. M. J. Kieran, Mr. W. J. McKnight, Dr. J. A. Mitchell, Mr. J. A. O'Rourke, Mr. M. J. Parkes, Sir Thomas Robinson, Mr. T. J. Smith, and Mr. D. Warwick.

### DEATHS

At the outset of the proceedings the PRESIDENT moved that the deepest sympathy of the Council be conveyed to the relatives of Mr. R. L. Tierney, M.P.S.I., Mr. J. S. Corcoran, M.P.S.I., Mr. D. G. McGahie, M.P.S.I., and Dr. R. S. Conyngham, L.P.S.I., whose deaths occurred recently.

Mr. FIELDING seconded the motion, which was passed in silence, all members standing.

Mr. J. D. Blair, M.P.S.I., Cork, wrote thanking the Council for their expression of sympathy with his family on the death of his father.

### CORRESPONDENCE

Mr. G. P. Forrester, Editor of THE CHEMIST AND DRUGGIST, wrote forwarding a mounted and enlarged copy of the photograph of the Council in session. The best thanks of the Council were tendered to Mr. Forrester for his gift, and it was decided to have insets made and affixed of the three members absent when the picture was taken, and the photograph framed and hung in the Society's offices.

Mr. M. J. O'Callaghan, one of the Society's examiners, wrote: "On page 109 of the Calendar appears the syllabus of the botany lectures, and after the list of natural orders is given a list of handbooks recommended. Am I to understand that questions at the examinations are to be confined to the somewhat restricted field of the first part of the syllabus, or is the examiner entitled to examine in the field of general botany covered by the handbooks in question?"

It was decided to refer Mr. O'Callaghan to the syllabus in the Calendar.

A letter was read from Mr. D. J. Nugent with reference to copies of the Pharmacy Bill which were sent to members of the Council. The letter was noted.

Further contributions to the Herbarium of the Society were received from Dr. W. H. Ashmore, M.P.S.I. The best thanks to the Council were tendered to Dr. Ashmore for his gift.

A letter was read from Mr. Daniel D. O'Sullivan, chief executive officer, Central Technical Schools, Tralee, applying for recognition of the school as a centre at which lectures and classes may be conducted for the Licence examination. A letter was also read from Mr. F. B. Giltinan, chief executive officer of the City of Cork Vocational Education Committee, applying for recognition of a course in pharmacy, at the Crawford Municipal Technical Institute. It was decided to refer both letters to the Schools Committee.

Mr. Thomas Hanna, R.D., wrote requesting to have his name erased from the list of associate druggists. The Council directed that the name be deleted from the list.

Mr. Joseph O'Reilly, M.P.S.I., the University Pharmacy, 102 Lower Leeson Street, Dublin, wrote inquiring why "pharmaceutical students, as such, are excluded from the National Library."

The REGISTRAR stated that he had written to the librarian on the matter, and was informed that owing to the increase in the number of readers doing serious reading and research, and to the limited accommodation

in the Library, the Trustees had been obliged to restrict the facilities formerly given to undergraduates of the Universities and others. Numerous applications from pharmaceutical students had to be refused because they were not regarded as being engaged in advanced study.

Mr. FIELDING: Are not our students doing advanced work?

Mr. PARKES: The Library is not for the general public at all.

In reply to Sir Thomas Robinson, the REGISTRAR stated that pharmaceutical students were not singled out. It was decided to take no action in the matter.

The Assistant Secretary of the Department of Justice wrote stating that an Order has been made approving of the appointment of Mr. Bernard Murphy as examiner to the pharmacy section of the Licence examination for the year commencing December 1, 1932.

The following further letter was read from the Assistant Secretary, Department of Justice: "I am directed by the Minister for Justice to ask you to be good enough to furnish your observations on the accompanying copies of protests addressed to the Minister for Education respecting the recent amendments in the Regulations for the Preliminary examination":—

The first protest, from the Rev. C. B. Armstrong, hon. sec. of the Secondary Schoolmasters' Association, stated:—

"We are informed that it is now necessary for a candidate to present three science subjects, e.g. chemistry, physics and botany, to the extent of the Leaving Certificate standard. This standard represents in the case of chemistry and physics a four-years' course, and in the case of botany a two years' course, and each of the subjects must be studied for a minimum of three hours per week. In practice it scarcely ever occurs at our schools that any one candidate would take more than two science subjects. . . ."

The second protest, addressed to one of the Education Commissioners, was from the Rev. Bro. J. J. Crehan, Mount Sion, Waterford, and included the following passage:—

"... no adequate notice was given even to candidates that failed at the last examination. It was only when they applied for the programme that they were told. Some of them would require two or three years more. You will have observed that 'Chemistry, Science, and Botany' is an impossible requirement except for students who would give a year in Dublin or Cork after completing the course for the Leaving Certificate. My suggestion was that the old programme, etc., should hold for the remainder of this school year."

To the registrar of the Society the following letter was addressed by the Rev. C. B. Armstrong:—

"I am very disappointed to receive your letter of November 9. . . . The effect of the new regulation will be almost to exclude the normal schoolboy who has not been specially preparing for the profession for at least two years."

It was decided to consider the Minister's letter on the Preliminary examination in conjunction with a motion on the agenda from Mr. Fitzpatrick.

### CHANGES OF ADDRESS

The following changes of address were notified:—

Mrs. J. McCarthy, M.P.S.I., to Kilshane, Finglas, co. Dublin; Miss K. Deery, M.P.S.I., to 44 Harold's Cross Road, Dublin; Mr. B. P. Hickey, M.P.S.I., to The Medical Hall, Rush, co. Dublin; Mr. W. E. Briggs, M.P.S.I., to The Medical Hall, 3 Church Buildings, Arklow, co. Wicklow; Mr. F. J. Keelaghan, M.P.S.I., to Cabra Prescription Pharmacy, 2 Imall Road, Dublin; Mr. D. J. O'Hanlon, M.P.S.I., to 162 Sunday's Well, Cork; Mr. T. L. Foster, M.P.S.I., to 4 Cook Street, Cork; Mr. James F. Walsh, L.P.S.I., to c/o McHugh's Medical Hall, Kildare; Mr. Michael I. Larkin, L.P.S.I., to The Medical Hall, Loughrea, co. Galway; Mr. T. Leahy, L.P.S.I., to Cratloe,

West, Abbeyfeale, co. Limerick; Mr. T. H. McCullagh, L.P.S.I., to c/o Smart & Copley, Ltd., Box 594, Bulawayo; Southern Rhodesia; Mr. James C. Walshe, L.P.S.I., to c/o T. L. Vickery, 2 Henry Street, Kenmare, co. Kerry; Mr. George A. C. Scott, L.P.S.I., to 12 Church Street, Dungannon, co. Tyrone; Mr. Kieran Flynn, L.P.S.I., to 82 South Main Street, Wexford; Mr. Mario McNally, R.D., to 7 Vernon Terrace, Rathgar, Dublin; Mr. Matthew Tucker, L.P.S.I., to 32 Prince's Street, Cork; Robert Couse, L.P.S.I., to c/o Hayes, Conyngham & Robinson, 22 Quinsboro' Road, Bray; T. J. Martin, L.P.S.I., to Tallaght, co. Dublin.

#### PRELIMINARY REGISTRATIONS AND RESTORATIONS

The following submitted certificates from other bodies, and were granted preliminary registration:—Misses Annie J. Mahon, Thelma H. Scott, Kathleen M. Lang, Teresa Cusack, Mary M. Smith, Messrs. J. P. O'Neill, James Walsh, Desmond P. McHugh, D. F. Donovan, James O'Keefe, Peter Varley, Denis R. Tully, Timothy Riordan, F. S. Watson, Louis W. Smith, Daniel Wynne, Peter Bardon, J. J. Carroll and P. J. Killian.

Messrs. R. Laffan, G. B. Johnston, H. McGailliard, B. Bassett and Comdt. D. Stapleton submitted affidavits asking restoration to the Register of Pharmaceutical Chemists. The applications were granted.

#### BENEVOLENT FUND COMMITTEE

On the consideration of Benevolent Fund Committee's report, Mr. FITZPATRICK mentioned that in one case a grant of £5 was recommended to a chemist who was in his seventy-ninth year, and who was a member of the Society for fifty-two years. The Fund served a very deserving purpose, and he urged them all to help it. If they could get a small annual subscription from every member of the Society who could afford it, it would be a great help. They had set them before the ideal of a fund of £1,000 to be invested in War Loan at 5 per cent., but now with the conversion of British War Loan they would require almost £1,500 to bring in £50 a year. They had also the idea in mind of giving one vote for every subscription. With the permission of the Council they proposed to send out circulars with a view to getting the Fund from £903 up to the £1,000 mark, and then on to £1,500.

Mr. KIERAN: Would you suggest half a guinea, or a guinea?

Mr. FITZPATRICK: I would say half a guinea. If we got 5s. from each member it would make a nice little nest egg for the Fund.

The PRESIDENT: Well, gentlemen, you have heard Mr. Fitzpatrick's statement on the Fund. I think we all agree that it is worthy of our support. We should adopt the idea Mr. Fitzpatrick suggested.

The report of the Committee and Mr. Fitzpatrick's proposal were unanimously adopted.

#### LAW COMMITTEE

The Law Committee's report contained a recommendation that, as a solicitor living out of Dublin was not satisfactory, the Society have a solicitor resident in Dublin, whose advice would be available at short notice for the registrar and officers of the Society.

After discussion it was decided to write to Dr. Kierans pointing out the Society's difficulties in the matter.

#### POISONS SCHEDULE SUBCOMMITTEE

On consideration of the Poisons Schedule Subcommittee's report the following resolution to provide for the inclusion of lysol as a poison was passed on the motion of Mr. Parkes: "That the Council approves of the following addition to the Poison Schedule: Add to the word 'Phenol' (commonly known as carbolic acid) in present Schedule the following words: 'And such of its homologues as do not contain more than nine carbon atoms, and all preparations and admixtures of Phenol and such homologues except tooth-pastes, tooth-powders and solid soaps for washing.'

#### DEATHS NOTIFIED

The Registrar notified the deaths of M. L. Tierney, M.P.S.I., J. S. Corcoran, M.P.S.I., D. G. McGahie, M.P.S.I., and Dr. R. S. Conyngham, L.P.S.I.

#### PRELIMINARY EXAMINATION REGULATIONS

Mr. F. J. FITZPATRICK moved the following motion standing in his name:—"That the words 'and no examination passed after the coming into force of these regulations will be accepted in lieu of this examination' be deleted from the Preliminary Regulations and the following words substituted in lieu thereof:—'The Matriculation certificate of the National University of Ireland may be accepted in lieu of the Preliminary examination of the Society, provided that: (a) The certificate includes the subjects of Latin and Irish. (b) The fee of four guineas is paid.'

Mr. FITZPATRICK said: In moving this motion I do not intend to inflict a long speech on you. It speaks for itself. The Matriculation examination is the test of general education required for entry into all the learned professions. Surely it is a sufficient test for entry into the commercial craft of pharmacy. I suggest that afterwards the question of our own Preliminary examination should be examined at leisure by a special subcommittee. It cannot be done before January, and there will not be another examination before six months, so there is plenty of time. We have had enough examples of the results of hurried regulation-making in the past to warn us against hasty action in the matter. It would be unthinkable to have such a subcommittee without the assistance of the president, and it would be unfair to ask him to take up the question until the Poisons Schedule Subcommittee has concluded its work. I may say with regard to the Poisons Schedule Subcommittee that Mr. Brooke Kelly's work on this matter alone will have deserved a niche of fame in the annals of this Society.

Mr. WARWICK seconded the motion, consideration of which was adjourned to the next Council meeting. It was decided to inform the Minister for Justice that the subject-matter of his letter was considered by the Council at the December meeting, and was adjourned for further consideration to the next monthly meeting in January, and that in view of the difficulties which had arisen his sanction was requested for not holding the January Preliminary examination.

#### EXAMINERS RE-ELECTED

The following examiners were each re-elected for one year, ending November 1, 1933:—Mrs. Murphy as Preliminary examiner; Dr. Keane as chemistry examiner; Mr. Burke as pharmacy examiner; Mr. Michael Smith as examiner for the Registered Druggist examination.

#### ELECTIONS AND NOMINATIONS

Licentiates elected members of the Society were:—Messrs. B. Murphy, 213 Shirland Road, Maida Vale, London, W.9; Henry McEver, High Street, Newmarket, co. Cork; Dermot McGrath, Bull Ring Pharmacy, Drogheda. Mr. E. Buckley, Main Street, Ennistymon, co. Clare, was elected to associateship.

The following were nominated for membership:—Mrs. J. McCarthy, Kilshane, Finglas, co. Dublin; Messrs. D. A. Dolen, 58 Bolton Street, Dublin; F. J. Keeaghan, Cabra Prescription Pharmacy, 2 Imall Road, Dublin; Leo F. Rickerby, 12 Palmerston Gardens, Rathmines, Dublin.

**FACE POWDER AS MEDICINE.**—"The chemist who has just been fined for selling face powder after 8 p.m. was not acquitted when he urged in self-defence that face powder is medicine. The law thinks somewhat narrowly of medicine, and only understands that chemists must keep open for emergency bottles of physic. But, if the definition of medicine is that which does you good, then, together with many rigorously disciplined drinks and books and toys and gramophones and all sorts of other things that chain-store chemists, with fine logic, have been adding to their stock, face powder is most certainly medicine. Cosmetics are an antidote to depression, and depression is fond of setting in well after 8 p.m. No legal system would be so brutal as to forbid chemists to sell soothing ointment after hours, but face powder is a balm of Gilead, which does more for the over-anxious mind than for the face; for faces, to do them justice, are generally self-sufficient."—"The Times."

# Proprietary Articles Trade Association

## New Constitution and Rules

**A**SPECIAL MEETING of the Council of the Proprietary Articles Trade Association was held at the Russell Hotel, London, W.C.1, on December 14, the president (Mr. J. Godber) in the chair.

The PRESIDENT stated that the sole business of the meeting was to consider and, if thought fit, adopt the new constitution and rules for the future governing of the Association. In framing the constitution and rules the Executive Committee had been guided throughout by the advice of Mr. Wilfred Greene, K.C., Sir Stafford Cripps, K.C., M.P., and Mr. H. Glynn-Jones, who were instructed by the late Mr. Cyril H. Kirby. The subject had received very careful consideration. He formally moved the following resolution:—

"The Council of the P.A.T.A., in the exercise of the powers conferred upon them under the constitution and rules of the Association and of all other powers enabling them in that behalf, hereby resolve that, as from January 1, 1933, the constitution and rules for the governing of the Association shall be as follows, and that as from that date the existing constitution and rules be annulled."

The principal changes in the rules are as follows (the numbering being that of new document):—

6. The Council shall be entitled at any time to remove from membership any member of the Association, provided that except where such removal is for default in the payment of any subscription the Council, before such removal, shall give notice to the member whom it is proposed to remove of the grounds upon which it is proposed to remove him and of the date before which such member may make representations to the Council against his removal. Not less than fourteen clear days' notice shall be given within which such representations may be made orally or in writing, and the Council, before finally deciding upon such removal, shall consider any representations so made. There shall be refunded to any member so removed, who has paid his subscription for the then current year of his membership, a part of such subscription proportionate to the unexpired part of that year.

25. The Council shall have power from time to time to alter, rescind, add to or suspend the rules and regulations of the Association or any of them, and unless the Council otherwise directs, notice of all such alterations, rescissions, additions or suspensions shall be sent to the members as soon as practicable.

37. The Council, in its uncontrolled discretion, may select the articles to be included in and to remain upon the Protected List, and may at any time remove any article from the Protected List for any reason, or may impose any condition in consideration of any article being included in or being allowed to remain upon the Protected List. In particular (without prejudice to the generality of the foregoing powers) in any case in which the Council think it necessary for the carrying into effect of the Association's policy the Council may impose a condition limiting the persons (whether wholesalers or retailers, and whether inmembers or not) to whom any article may be supplied and stipulating the terms upon which it may be supplied to such persons or any of them, including, in the case of any person, a term that such persons shall enter into an agreement with the Association governing the sale or distribution of the article and making provision, if necessary, for the giving by such person of security by bond or by the deposit of a sum of money or otherwise for the due fulfilment of any undertaking which the Council, in its discretion, sees fit to require upon him to give with a view to carrying out the Association's policy.

40. The Council may place upon the Stop List the name of any person who, in its opinion,

- (1) is selling, supplying or dealing in any way with, or who has sold, supplied or dealt in any way with any article on the Protected List in any manner not in accordance with any of the Conditions affecting wholesalers or retailers, as the case may be for the time being in force under these rules;
- (2) solely or in conjunction with any other person or persons owns, conducts, controls, or is in any way

directly or indirectly interested in or concerned in the conduct of any business which, in the opinion of the Council, is so directly or indirectly identified or connected with that of some other person whose name is on the Stop List or whose name the Council might, for any of the reasons set out in this rule, place upon the Stop List that for the purpose of carrying into effect the Association's policy the Council deems it advisable for supplies to be withheld from such first-mentioned person;

- (3) is dealing or has dealt or offered or proposed to deal in any article on the Protected List in any manner whatsoever which the Council consider to be or likely to be prejudicial to the carrying into effect of the Association's policy, or in quantities which, in the opinion of the Council, are excessive having regard to the reasonable requirements of his business.

41. Before placing the name of any person on the Stop List the Council shall cause notice to be given to such person of the reason for such action and of the date before which such person may make any representations, if he so desires, against such action. Not less than seven clear days' notice shall be given within which representations may be made orally or in writing, and the Council shall, before placing the name of such person on the Stop List, consider any representations so made.

Provided that in the event of the secretary or one of the secretaries being of opinion that urgent action is required in the interests of the Association's policy, the name of any person may be placed forthwith upon the Stop List by such secretary without reference to the Council and without previous notice, but in any such case notice shall forthwith be given to such person of the action which has been taken, together with the reason therefor, and he shall be afforded an opportunity of making representations to the Council, either orally or in writing, against such action within a time to be specified in such notice, and the Council may, after considering such representations, if any, confirm, vary or cancel such action.

42. The Council may at any time remove the name of any person from the Stop List, either unconditionally or upon such conditions as the Council thinks fit for carrying into effect the Association's policy, and, in particular, may require any person on the Stop List to give such undertakings or enter into such agreement and, if thought fit, give such security for the fulfilment of such undertakings or agreements by bond or by the deposit of a sum of money or otherwise as the Council may deem necessary for carrying into effect the Association's policy. The Council may likewise require any person not on the Stop List to give such undertakings or enter into such agreement and, if thought fit, give such security for the fulfilment of such undertakings or agreements by bond or by the deposit of a sum of money or otherwise as the Council may deem necessary for carrying into effect the Association's policy.

45. The Conditions affecting Proprietors shall be determined from time to time by the Council and shall be such as, in the opinion of the Council, are desirable for carrying into effect the Association's policy. Until otherwise determined, the Conditions affecting Proprietors shall be as follows:—

- (i) No article on the Protected List shall be sold or supplied to any person for resale unless such person agrees or has agreed to observe the Conditions for the time being in force under these rules affecting wholesalers or retailers as the case may be.
- (ii) No article on the Protected List shall be supplied in any way, whether by sale, exchange, barter, gift or otherwise, to any person whose name appears on the Stop List or to any person who, to the knowledge of the supplier, is contravening any of the Conditions affecting wholesalers or retailers as the case may be for the time being in force under these rules.
- (iii) Every Proprietor shall, upon demand by the Council, furnish to the Council a list of all persons to whom he supplies his article at prices lower than the minimum wholesale prices published in the Protected List.
- (iv) No Proprietor shall supply his article to any person in quantities which are, in the opinion of the Council, excessive, having regard to the reasonable requirements of the purchaser's business.

- (v) Every Proprietor shall, if required so to do by the Council, mark every package of his article supplied by him to his customers, or to such of his customers as the Council may nominate, in such a manner as to enable him to identify the person to whom the packet so marked was supplied.
- (vi) Shall make it a term of any contract as to future sales that such contract shall be terminated forthwith in the event of the purchaser having his name placed upon the Stop List.

47. The Council may require members of the Association not to deal in goods on the Protected List with any wholesaler unless such wholesaler has agreed with the supplier or with the Association to observe the Conditions affecting wholesalers in force for the time being under these rules.

[Wholesalers' conditions (Rule 44) are similar to proprietors' conditions.]

The resolution was seconded by Mr. F. J. SMITH, who said that although the original rules of the P.A.T.A. were purposely made as elastic as possible, he was sure that in view of the present-day difficulties the founder, Sir William Glyn-Jones, would have endorsed the Council's policy, which was designed solely to consolidate and strengthen his work.

Mr. P. F. ROWSELL, supporting the motion, reminded

the Council that he was one of the early founders of the Association. He trusted that there would be no hesitation in applying fearlessly the powers conferred upon the Council by the new constitution and rules.

Other members supported the resolution, which was carried unanimously. The proceedings terminated with a vote of thanks to the president.

## Council Election (Retail Section)

The result of the Council election, dated December 19, is as follows:—

Voting papers issued, 9,125; returned, 2,740; disallowed, 32. The votes were recorded as follows:—

* Armitage, N. N.	...	...	2,512
* French, J. E.	...	...	2,396
* Milner, J.	...	...	2,502
Skues, E.	...	...	1,067
* Smith, J.	...	...	1,715

The names marked with an asterisk are those of members of the present Council. The four receiving the highest numbers of votes are elected.

# Insurance Dispensing Depôts

## Practical Difficulties

FROM time to time Insurance Committees have had to provide, for insured persons who reside in districts where there are no chemists in business, facilities for obtaining the medicines prescribed for them by their panel doctors. As a rule the Insurance Committee considers the facts of each case, and may require the insured person's doctor to supply all the medicine which may be necessary. If the doctor, however, does not wish to undertake this dispensing, and if he does not do any dispensing for his non-insured patients, the Insurance Committee cannot compel him to supply medicine to the insured persons for whose treatment he is responsible. The Committee must then make other arrangements for the supply of the necessary medicines to these persons. The Committee generally appoints what is called a Dispensing Subcommittee to consider these cases, which is composed of two representatives of insured persons, two doctors, two chemists and a neutral chairman.

The arrangements made vary with the circumstances; but it is important that, whatever arrangements are made, the Pharmaceutical Committee for the area should satisfy itself that they involve no infringement of the chemist-contractors' rights, and that they conform strictly to the provisions of the Pharmacy Acts. It may be that in their desire to meet the convenience of the insured person, the Insurance Committee, which can only be considered as a lay body in matters of pharmaceutical law, may agree to some arrangement which contravenes the Acts regulating the sale of poisons. In these matters they should be advised by the Pharmaceutical Committee. Indeed, the Pharmaceutical Society itself should be on the look-out to see that such arrangements are legally correct.

An Insurance Committee constituted for a rural area recently dealt with a case of this kind in connection with the supply of medicines in two adjoining villages. The Dispensing Subcommittee reported that a satisfactory arrangement had been made for the supply of drugs at the village, where no chemist existed, the doctor leaving the prescription with the chemist at the next village selected by the patient, and the chemist sending the medicine to a dépôt at the other village to be collected by the patient. Here is an example of the kind of arrangement which may be made.

On the information supplied in this paragraph one is led to wonder whether this arrangement is satisfactory from the pharmaceutical point of view. This depends on the precise character of what is referred to as a "dépôt," from which the patient is to collect his supplies. It also involves consideration of the legal definition of the "seller" and the "open shop."

In a *C. & D. Diary Legal Compendium* there are two paragraphs worth noting in this connection. Under "Agency" it is clear that an unqualified person who takes an order is not making an illegal sale if the person authorised to sell sends the goods direct to the customer. Then under "shop" it is equally clear that it is an offence under the Pharmacy Acts for an unqualified person to sell poisons to the public, even though, apparently, he does not keep a shop for this purpose. Several years ago the writer put the following query to an officer of the Pharmaceutical Society:—A is a chemist in a village X; three miles away there is a village Y in which there is no chemist's shop, but A makes an arrangement with B, a grocer in Y, to act as his agent and sell on commission medicinal products and sundries which do not come within the scope of the Pharmacy Acts. Can B, the agent, receive Insurance prescriptions for A to collect, dispense and return to B for B to hand to the insured person who calls for them? The answer to this query (which the writer will put no higher than an expression of personal opinion) was "No." Under such an arrangement B, the grocer, would be deemed to be keeping open shop for the sale, to insured persons, of dispensed poisons. The only legal and apparently safe course is for the chemist A to collect prescriptions left by insured persons with B, and having dispensed them to deliver them (e.g., by means of a bicycle messenger) to the patients' addresses. The chemist then is undoubtedly the seller, and the chemist's shop is the place of sale.

Bearing in mind the three instances just referred to, one comes back to the report of the Insurance Committee quoted in the third paragraph above with a desire to know more about the "dépôt" from which the insured person is to collect his medicine. One can see no harm in it if it is a relative's house, a railway station, or even the post office; but suppose it is a shop kept open for any purpose. Once any such arrangement is officially recognised, it is not difficult to proceed by easy stages to some such position as this—that a chemist in a central position may maintain, in several surrounding villages, business premises which he carries on as unqualified drug stores, and that he may use these as dépôts for the collection and delivery of Insurance prescriptions and medicines, while doing all dispensing at the central shop. This is an arrangement which should not be tolerated by the Pharmaceutical Society. Indeed, Insurance Committees themselves, on several occasions, have set their faces against any such arrangement.—INSURANTO (3/6).

# Perfumery Solvents

By H. Stanley Redgrove, B.Sc., F.I.C.

**T**HE ideal solvent for use in the manufacture of perfumes would be one possessing the following properties: (a) colourless, (b) odourless, (c) readily volatile, (d) non-poisonous, (e) a good solvent for all essential oils, synthetics and other aromatic materials used in perfumery, (f) cheap; the function of such a solvent being to enable one to spread a small quantity of aromatic material over a large surface. Pure ethyl alcohol does possess most of the requisite properties. The odour of alcohol, though slight, is not a negligible factor in the manufacture of perfumes. It is well known that the source of the alcohol is important, owing to the presence of minute traces of odorous impurities, wine alcohol being preferable in some cases, and corn alcohol or rice alcohol in others. In any case, purification of the alcohol, so as to reduce the impurities to a minimum, is very desirable. In the case of eau de Cologne the odour of the alcohol, which should be purified spirits of wine, containing a trace of oenanthic ether (ethyl heptoate), should be an integral part of the fragrance of the perfume. Hence there is no satisfactory substitute for alcohol possible in this instance. The cheap eaux de Cologne made with isopropyl alcohol so common to-day are generally horrible concoctions. On the other hand, the odour of alcohol is, in the case of many perfumes, a definite drawback, as one cannot smell the perfume until the spirit has evaporated.

### Substitutes for Ethyl Alcohol

Most essential oils contain hydrocarbons belonging to the classes of terpenes and sesquiterpenes. Essential oils freed from their sesquiterpenes and/or terpenes by fractional distillation are obtainable, and, by the aid of these and of aromatic substances of synthetic origin, perfumes may be prepared by the aid of very dilute spirit, the cost being thereby decreased. It is, moreover, a fact that less material is necessary to aromatise dilute spirit than is required in the case of less dilute, owing to the masking effect of the odour of the alcohol. Gattefossé says ("Formulary of the Parisian Perfumer," 4th edition, 1923): "Practically, any liquid containing from 10 to 15 grammes of alcohol per litre, is considered as containing no alcohol. . . . It will be easy to aromatise products sufficiently, by dissolving, for instance, from  $\frac{1}{2}$  to 1 gramme of terpeneless essential oil or synthetic perfume, in 10 grammes of alcohol, and simply putting it into the water, when it will completely dissolve. Besides, it is possible to increase this quantity of oil (1 gramme), by using a solvent composed of 10 grammes glycerin and 20 grammes absolute alcohol." There are available for use in place of glycerin a number of glycols and their derivatives, of which, perhaps, ethylene glycol mono-ethyl ether is one of the most interesting, owing to its good, solvent powers. But their relatively high boiling points render solvents belonging to this class of limited service to the perfumer. The one solvent which has found (limited) favour as a substitute for ethyl alcohol in perfumery is its homologue isopropyl alcohol. In general, diluted isopropyl alcohol is a better solvent for terpeneless oils and synthetic aromatic substances than is diluted ethyl alcohol.

Fine perfumes cannot be made with isopropyl alcohol; but, where cheapness is all important, it presents itself as a serviceable material. Moreover, for use in hair lotions it is quite suitable, and is much to be preferred to industrial spirit containing poisonous wood naphtha. The tang of isopropyl alcohol blends well with rough odours; hence the material is an admirable solvent for use, e.g., in making bay rum.

The recent relaxation, by the Customs and Excise authorities, of the regulation prohibiting the use of in-

dustrial methylated spirits for the manufacture of perfumes has led to the placing on the market of denatured spirit of very high quality. Indeed, it is said that pure methyl alcohol is employed for denaturing in place of crude wood naphtha. This concession has received a very warm welcome. Perfumes made with this solvent, however, are very far from being in the first grade. Their outstanding merit is cheapness. They sell well to a certain section of the public, but profits have to be cut very low owing to competition; and there is a grave danger that the numbers will grow of those content with a cheap and nasty perfume at the expense of that section of the public appreciative of fine perfumes and willing to pay for them.

### Aromatic Waters

Perfumers use immense quantities of rose water and orange-flower water. Pleasing modifications of these waters could be made by incorporating with them traces of additional aromatic material. For example, the addition of patchouli oil, about four drops to the quart, to rose water yields an agreeable result. Soluble synthetics should not be lost sight of. Vanillin is decidedly soluble in water, the solubility increasing with the temperature, so that a cold saturated solution can easily be made by allowing a strong, hot solution to cool. Coumarin and heliotropine are less soluble, but still enough can be dissolved to give an aroma to the product. Moreover, all these substances are valuable fixatives. Here are some typical formulas to serve as examples:—

#### *Ylang-ylang (de luxe) (Durville)*

Tuberose absolute	10 gm.	Vanillin	5 gm.
Mimosa absolute	10 gm.	Ambre, artificial	16 gm.
Everlasting flower absolute	10 gm.	Terpeneless Ylang-ylang oil	45 gm.

Dissolve in one of the solvents indicated in the proportion of about 20 to 30 parts of perfume material to 100 parts of finished perfume.

#### *Eglantine or Wild Rose (Gattefossé)*

I	II
Aubepine ... 100	Rose, artificial ... 100
Rose, artificial ... 50	Terpincol ... 60
Jasmine, artificial ... 50	Musk ambrette ... 10
Diethyl phthalate ... 400	Benzyl benzoate ... 330

Finally, mention may be made of concentrated non-alcoholic perfumes which are prepared by the aid of relatively non-volatile solvents of high solvent power, the most useful, perhaps, being diethyl phthalate, benzyl alcohol, benzyl benzoate and terpineol. Diethyl phthalate is a colourless and practically odourless liquid, and is an excellent solvent for aromatic substances, including the artificial musks. Benzyl benzoate, when absolutely pure is a crystalline substance at ordinary temperatures, but the commercial article is liquid. It has a slight and pleasant aromatic odour and is a very good solvent, its solvent action on artificial musks being considerably greater than that of diethyl phthalate. The odour of benzyl alcohol is also very slight, but it is apt to develop an almond-like odour on exposure to the air, owing to the formation of benzaldehyde. Terpineol is an admirable solvent, cheap, colourless and very stable. It has a lilac-like odour which limits its utility, although the odour blends well with that of numerous perfumes. For fine perfumes of the type under consideration, Durville ("Nouveau Formulaire") advocates the incorporation of a proportion of tuberose absolute, which produces suave and agreeable effects. These concentrated perfumes were much in evidence at the French Colonial Exhibition. They should be packed in bottles fitted with long pointed stoppers.

## The Reading Addition

THE first thing to decide before commencing a test for near vision is the distance at which the subject proposes to work with the glasses when they are made up. If they are purely for reading in the ordinary way the distance will be 13 in., if they are for working at a bench 24 in. will be nearer the mark. Quite a lot of people ask for reading glasses when they require them for other work, such as weaving, and when the eyes have little accommodative power the optician's reputation suffers if a person requests reading glasses and tries to use them at about 20 in. When testing for an ordinary reading addition, first make a binocular test, increasing the power until the patient can read the smallest type on the chart. Then find the furthest point and the nearest point at which the smallest type can still be read, and at each point occlude each eye in turn, and if the wording can be seen with each eye at each point it will be in order to give the same reading addition for each eye. If the mean distance between these points is the same as the distance at which it is proposed to use the correction, the *plus* power already in the frame will be the best to prescribe, unless it is modified by other considerations, such as the muscular condition. But suppose one eye is found to read better than the other, or that the near and far points differ, then the cause is to be sought either in the distance findings or some pathological condition. Should the respective near and far points be R. 8 in. and 18 in., L. 12 in. and 28 in., the most comfortable reading distance is going to be nearer the face for the right eye than the left, causing considerable trouble. For the right eye the mean between the near and far points would be 13 in., but calculated in diopters it would be much nearer, about 11 in. For instance, in the case of the right eye, the near point requires 5 diopters of accommodation (40 in. divided by 8 in.), and the far point requires 2.2 diopters (40 in. divided by 18 in.). The accommodation exerted to focus at these two points, when wearing the correction, is 2.8 diopters. For comfortable near vision, assume that the subject uses half of the available accommodation, so that half of 2.8 added to the accommodation used at the far point is  $2.2 + 1.4 = 3.6$  D. Dividing 3.6 into 40 in. (the equivalent of one metre), gives 11 in. So while the mean between these points in inches is a good guide, it is better if the practitioner can develop the habit of thinking in diopters, or use a near point measure having dioptic markings. The mean dioptic measurement expressed in inches should then approximate the distance for which the correction is required to be worn. In the case stated above, the mean dioptic measurement between the near and far points would be 16½ in. for the left eye and 11 in. for the right. For reading glasses the right eye would require less, and the left eye more *plus* if we take 13 in. as a suitable reading distance. This case is an exaggeration, but it is obvious that the distance findings require altering. In practice one seldom finds it necessary to modify the distance correction by more than 0.25 D. Also in the case above the accommodation would appear to be 2.75 D., R.E., and 2.4 D., L.E. Where the eyes show a difference in accommodative power, as already stated, one should suspect some pathological condition. When the reading addition has been found it should be compared with the amount of *plus* the subject might be expected to require in view of his age. The generally accepted amplitudes of accommodation in normal eyes are: 10 years of age, 14 D.; 20 years, 10 D.; 30 years, 7 D.; 40 years, 4.5 D.; 50 years, 2.5 D.; 60 years, 1 D.; 70 years, none. The table given represents the minimum amplitude of accommodation which should be found. Higher amplitudes will often be noted, but it is when the amplitude is lower than some abnormality should be suspected. For ordinary purposes we may assume that half of the accommodation available can be used for reading, so that a person 40 years of age

might be expected to use half of 4.5 diopters, 2.25 D., and for reading at 13 in. would require an addition to the distance correction of +0.75 diopters. But when making comparisons from the table it should be remembered that presbyopia will probably be greater where there is some esophoria, and less with exophoria. Also the pupillary distance has a slight effect, a large P.D., necessitating greater convergence effort, and consequently causing more convergence accommodation than a smaller P.D.—S. H. L. (5/12).

## B.P. Notes

### The New British Pharmacopœia

Tinctura chlorof. et morph. co. is one of the preparations which have not been popular; the cost was against its use, while the green colour was commercially (and, I believe, medicinally) objectionable. In addition the public had been accustomed to the proprietary type of chlorodyne, and every pharmacist knows that the colour factor is an important one in medicine. I found the '85 variety, half strength and made a little thinner, an admirable chlorodyne for general purposes, and shall continue its use. A really stable ipecacuanha preparation will be a boon. There still lingers, however, a fetish-like faith in medicated wincs.—*Antiquus* (17/10).

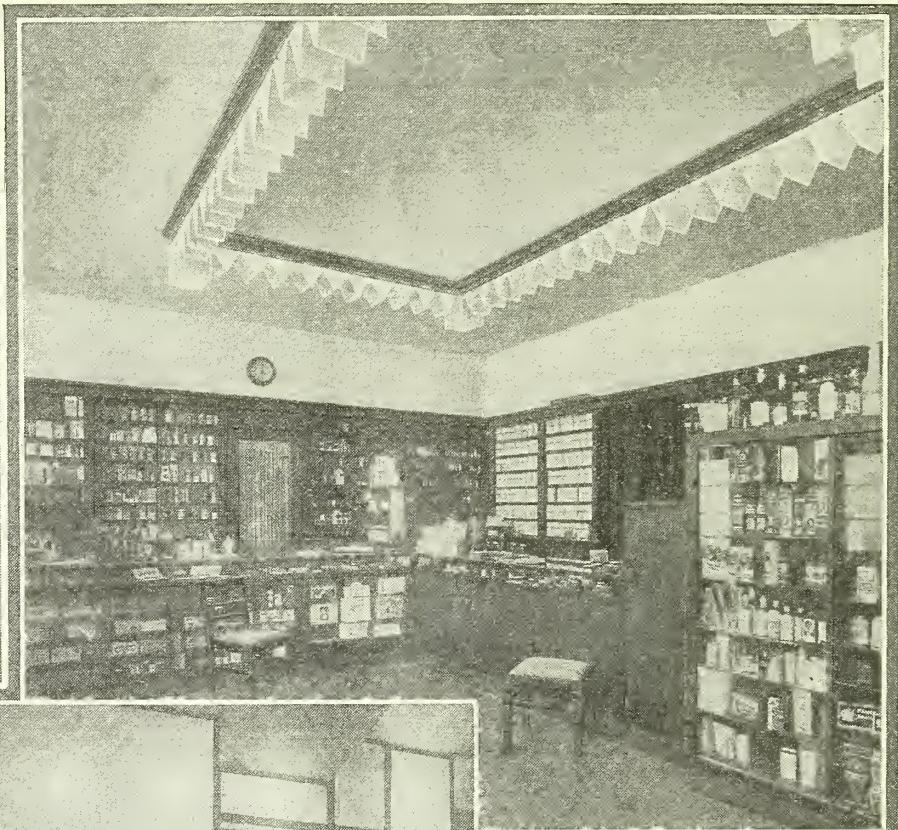
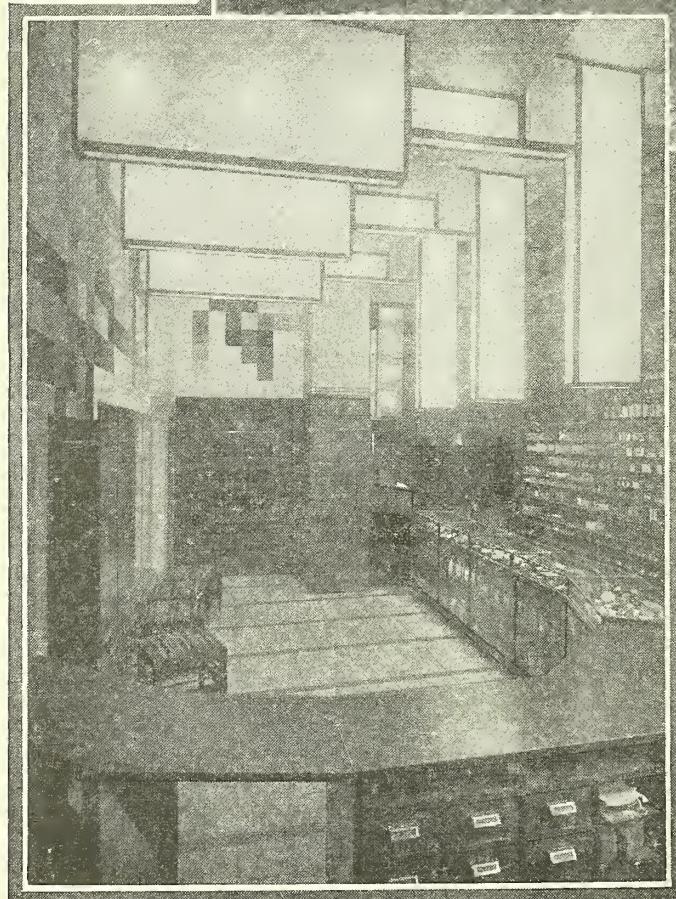
### The Official Doses of Strychnine

The peculiarities of the new B.P. continue to be brought to light by many contributors, but so far I have not seen any comments on the variations in the doses of strychnine and its preparations, which are peculiar. The alkaloid has been deleted, but the maximum dose of the hydrochloride has been doubled, from gr.  $\frac{1}{16}$  to gr.  $\frac{1}{4}$ . The liquor remains of the same strength as before, but the full dose has been raised from  $\text{m.viii}$  to  $\text{m.xii}$ . The dose of Easton's syrup remains 5j, but the strychnine content has been halved; and, lastly, tinct. ruciis vom. contains approximately the same percentage of strychnine but the dose is doubled, from  $\text{m.v}$  to  $\text{m.v}$ , thus bringing it back to the level of the B.P., 1898, when although the dose was  $\text{m.v}$  the strength was double. It seems strange that all these years chemists have had to consider the maximum dose of strychnine hydrochloride as gr.  $\frac{1}{16}$  and now can dispense double without query; if such a dose had been prescribed under the previous B.P. it would have necessitated referring to the prescriber.—N. B. P. (14/11).

### Fresh Infusions

The preparation of the official infusa recentia has removed some of the ambiguity so prevalent in the B.P. from the first. Where formerly we were required to add 20 fluid ounces or 1,000 millilitres of boiling distilled water to the drug, the procedure is now simplified. There are, however, still some defects in the directions. We are not told whether the infusion should be stirred, nor, if so, with what instrument; nor (and perhaps equally important) are we told what the strainer should be, although the "while hot" of the B.P., 1914, is omitted. When the previous B.P. did mention a strainer, it was either flannel (dec. aloes co.), "fine muslin" (mist. amygd.), or "muslin" (mist. ammoniaci). Once more the onus is placed upon the school, college, warehouse or shop to advise the trainee how to proceed in dispensing infusions, for does not the examiner still lay traps for the unwary, and in his mixture ensure the presence of sodium bicarbonate, spirit of chloroform, ether or its spirit, and so forth? One could have wished that less ultra-refinement had been exercised in things that do not matter and a little more detail given in matters of importance to the practical man.—*Abel Scholar*.

# Interior Lighting: Two Modern Designs



A NOVEL system of lighting is shown in the illustration (above) of the interior of the Marien-Apotheke, Berlin. A special ceiling has been built to carry a series of some two hundred electric lights, the lamps being so shaded as to throw a diffused light to every part of the pharmacy; this is the first installation of its kind in Berlin. On the left a different, though no less effective, system is shown. The Mohren - Apotheke, Breslau, is noted for modernity of design and the lighting is no exception; tasteful wall decorations add to the attractiveness of the general scheme.

## Trade Notes

THE following advertisers in this issue have their announcements printed in two colours:—Stafford Allen & Sons, Ltd.; Butler & Crispe; A. de St. Dalmas & Co., Ltd.; Leyland & Birmingham Rubber Co., Ltd.; May & Baker, Ltd.; Potter & Clarke, Ltd.; Trade Commissioner for Mysore.

RHEUMASOX are supplied by Ormerod, Gibbs & Co., 6 Conduit Street, London, W.1.

ALFRED WHITE & SONS, LTD., 28 Allen Street, Goswell Road, London, E.C.1, are advertising in this issue chemicals for research, pharmaceutical and technical purposes.

GREETINGS.—Among the manufacturers using advertising space in this issue to convey to their customers and friends best wishes for the coming year are: Hunter Beattie, Glasgow; Meggeson & Co., Ltd., London, S.E.16; Vareen, Ltd., London, W.11.

CLOTABS is the name of cod-liver oil extract tablets placed on the market by Macleans, Ltd., Great West Road, Brentford. The tablets are packed in bottles of 24 and 63. Further details regarding this product and particulars of the window display terms will be sent on application.

MONO CONTAINERS, LTD., Park Royal, London, N.W.10, are offering containers eminently suited for many products which are sold by chemists. This form of enclosure is not only attractive, but has the merits, among others, of being economical and hygienic. It is also convenient from the user's point of view.

A COLOUR SCHEME.—The Methylating Co., Ltd., Kinaird House, Pall Mall East, London, S.W.1, announce that from January 1, 1933, their products will be supplied in containers of the following distinctive colours: Blue, industrial methylated spirits; Black, pyridinised methylated spirits; Red, mineralised methylated spirits; Yellow, methylated finish.

A SHAMPOO FOR CHILDREN.—Camilatone, Ltd., 59 Oak Grove, Cricklewood, London, N.W., have introduced a shampoo under the style of Camilatone Children's Beauty Shampoo. Such a product placed on the market by a manufacturer whose hair preparations are so well known is bound to meet with a good demand. In addition it has the merits of a strong appeal to mothers who study their children's appearance, it is nicely packed and inexpensive.

SANDALWOOD OIL.—Chemists will read with interest the announcement in this issue wherein the Trade Commissioner for Mysore deals with what should be supplied when sandalwood oil is prescribed, and the value of the East Indian variety in perfumery. The Government of Mysore is issuing an informative booklet on oil of sandalwood distilled from *Santalum album*, Linn., and a copy may be obtained free on application to the Trade Commissioner, Grand Buildings, Trafalgar Square, London, W.C.2.

## Personalities

MR. EWART WOOLLEY, manufacturing chemist, Blackburn, has been appointed secretary of the Queen's Hall Methodist Mission.

MR. W. H. SNOWDON, chemist and druggist, Spennymoor, has been elected a member of the committee of the local chamber of trade.

MR. HERBERT SKINNER, Ph.C., chairman of the British Pharmaceutical Conference, 1931, is the subject of an appreciative notice in the November issue of the "Journal of the American Pharmaceutical Association."

ALDERMAN J. DUDFIELD ROSE, chemist and druggist, Jarrow-on-Tyne, has issued a third edition of his illustrated handbook on "Jarrow Church and Monastery," with new information bearing on life of the Venerable Bede.

## Births

Notices for insertion in this column must be properly authenticated.

MCDOWALL.—At St. Andrews, on December 18, the wife (*née* Murray) of Ronald McDowall, M.P.S., of a son.

## Marriages

BYRNE—ADAMS.—At the Presbyterian Church, Hillsborough, on December 16, Charles Edward Byrne, M.P.S.N.I., The Medical Hall, Dromore, co. Down, to Maud Adams.

## Deaths

CLARK.—At Belgrave Crescent, Edinburgh, on December 21, Mr. William Inglis Clark, D.Sc., Ph.C., F.R.S.E., senior partner of Duncan, Flockhart & Co., manufacturing chemists, Edinburgh and London. Dr. Inglis Clark was educated at the Royal High School and the University of Edinburgh. He qualified as a pharmaceutical chemist in 1877; after graduating in science in the University, he was appointed assistant to Professor Crum Brown. He became associated with Duncan, Flockhart & Co. at an early age, and was made a partner in the course of time. It may be remembered that the then oldest surviving partner of the firm, Dr. J. L. Ewing, died on August 22 last. Dr. Inglis Clark found recreation in mountaineering, photography and other hobbies. At the 1912 meeting of the British Pharmaceutical Conference in Edinburgh he delivered a lecture, illustrated by coloured slides made from his own photographs, on the scenery of Scotland. He was secretary of the Scottish Mountaineering Club for twelve years and its president for six years. He was also a member of the Alpine Club in London. His garden at Oakwood, Rosslyn Castle, was famous for its beauty. In 1929 he presented to the Scottish Mountaineering Club, in memory of his only son (who was killed in the recent war), a hut he had erected on Ben Nevis. Dr. Inglis Clark is survived by a widow and a daughter.

CUMBERLAND.—At Wakefield, on December 15, Mr. Charles Cumberland, chemist and druggist, aged forty-four.

DAY.—At his residence, "Glen Holme," Highfield Park, Rhyl, on December 24, Mr. John Charles Thomas Day, L.P.S.I., chemist and druggist, aged eighty-six. Mr. Day, who was a native of Limerick, held the qualification of the Pharmaceutical Society of Great Britain as well as that of his native country.

FRASER.—At Edinburgh, on December 15, Mr. Jonathan Innes Fraser, Ph.C., aged seventy-six. Mr. Fraser was in business for a long period at 9 Dundas Street; his pharmacy was one of those illustrated in a Special Issue of THE CHEMIST AND DRUGGIST (1912, II, 145) when the British Pharmaceutical Conference last met in Edinburgh.

MASTERTON.—On December 15, Mr. George Masterton, chemist and druggist, manager at Church Street, Weybridge, for Timothy Whites (1928), Ltd., aged thirty-six.

PETTIT.—In a Dublin nursing home, on December 17, the wife of Mr. Michael Pettit, L.P.S.I., Clara, Offaly.

RICHARDS.—Recently, Mr. John Wesley Richards, chemist and druggist, for more than fifty years in business at 37 Clayport Street, Alnwick, aged seventy-seven. Mr. Richards took a prominent interest in all local affairs, and was the oldest member of the Alnwick Wesleyan Church. Representatives of local authorities were present at the funeral.



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| B/2012. Bassorin (original suppliers) |  |
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THE

**CHEMIST AND DRUGGIST**

VOL. CXVII. DECEMBER 31, 1932 NO. 2760

**A Year of Perplexities**

ONCE more the end of the year finds the nation involved in a sea of troubles, with pharmacy sharing in the general condition of perplexity, while also confronted with difficulties peculiarly its own. Following on its confirmation in office by an overwhelming vote of the people, the National Government has been steadily engaged during the year in its policy of reconstruction. This has necessarily involved the taking of steps to counteract the ill effects of going off the gold standard, and it is noteworthy that the operation of something almost equivalent to the setting up of a "sterling" standard throughout the world has prevented any marked increase in the cost of the necessities of life in this country. At the same time there have been many set-backs accompanying the transition from free trade to protection as a working principle, not the least being the difficulties due to the erection of unfamiliar customs barriers. An Import Duties Act was passed early in the year, and this was followed by the presentation of a cheerless budget which afforded no relief to the overtaxed. Nevertheless, as we pointed out at the time, the methods adopted for meeting the nation's obligations placed the Chancellor of the Exchequer in the favourable position of presenting a balanced budget—a phenomenon almost unique in the world at that time. A more cheerful touch was applied by the holding of the Imperial Economic Conference at Ottawa, where a definite

trade policy was formulated and

**THE OTTAWA AGREEMENT** reciprocal trade agreements were effected between the Government of the United Kingdom and those

of other nations of the British Commonwealth. There has been little to record in the shape of new legislation. The British Parliament has passed another Dangerous Drugs Act, and the Patents and Designs Act, 1932, came into force on November 1. In the Irish Free State a Therapeutic Substances Bill has been introduced, while in Northern Ireland a Dangerous Drugs Act has brought that part of the United Kingdom into line with Great Britain. Of pharmaceutical legislation there has been none. The Pharmacy and Poisons Bill has remained in a state of suspended animation since the National Government was confirmed in power, and there appears to be no immediate prospect of its revival. Definite acceptance of the Bill, while still before Parliament, was recommended by the Council of the Pharmaceutical Society and approved at meetings of delegates of branches of the Society and the Retail Pharmacists' Union (since renamed the National Pharmaceutical Union), subject to the absence of amendments likely to affect pharmacy adversely and Government protection against the adoption of any such amendments. But the psychological moment

had passed, and despite general agreement between the Government departments concerned and the chief pharmaceutical organisations, the Bill does not exist as a Parliamentary measure for the time being. According to Mr. A. R. Melhuish, the passing of the Bill is, sooner or later, inevitable; moreover, he thinks it represents a gain for pharmacy over prevailing conditions and is the best that is obtainable through Parliament for pharmacy to-day. Mr. E. T. Neathercoat has also urged acceptance of the measure by chemists and druggists generally; and his very broad view of the potentialities of the Bill has been supplemented by Mr. Herbert Skinner, who anticipates the consolidation of pharmacy into an organised profession as something which the Bill may be expected to bring about in time. But the fact remains that the Bill has not been reintroduced into Parliament by the Government, and the state of public business lends little hope to the prospect of any further progress with the measure for some time to come. Neither, sad to relate, is there any reason to believe that the Pharmaceutical Society's Council is yet taking steps to present to Parliament and the world a complete case for recognition of pharmacy as a professional occupation. We have suggested that a constructive policy is required in this respect, and that a programme of pharmaceutical reform should be in being. Support to this view has not been lacking, but lukewarmness on the subject seems to pervade the ranks of pharmacy, not improbably because chemists and druggists as a class are suffering from the heartsickness which is understood to accompany hope deferred. Nevertheless, it must be recognised that there is urgent need of a bold pharmaceutical policy, including a claim for reservation to duly qualified pharmacists of the supply of everything required for medicinal purposes. It is unfortunate that enunciation of such a policy as yet lacks official support. While backward in this respect, however, the Pharmaceutical Society has shown marked signs of progressiveness in other directions. Useful changes have been effected in the regulations applying to the Preliminary examination, and a

**SCHOLASTIC CHANGES** beginning has been made in the matter of regulating apprenticeship training. On the proposition of Mr.

John Humphrey, the Council decided to arrange a vacation course in modern developments of pharmaceutical practice, with a view to enabling practising pharmacists to keep themselves abreast of the times so far as the most modern medical treatment is concerned. The success attending the holding of this course was held to justify repetition during the coming year, while a course of instruction in biochemical analysis has been arranged, in a laboratory equipped for such work. Diplomas in this subject and in the subject of pharmaceutical analysis are henceforth to be issued by the Society, and should meet undoubted wants. A proposal to admit ordinary members of the Society as visitors at meetings of the Council could not be carried into effect because of lack of suitable accommodation, a further instance being thus provided of the insufficiency of the Society's premises for current needs. It is understood that

preliminary arrangements have been made for the preparation of plans for the new premises to be erected in Brunswick Square; but the financial aspect of the matter remains to be faced, and the necessity of giving close attention to the subject of finance generally has not, we believe, been overlooked. The financial statement of the Society for the year 1931 showed a recovery as the result of various economies, but the balance in hand at the end of the year did not allow of any addition to the building fund. In the Society's annual report it was shown that membership had again increased, but of the 13,595 voting papers issued for the election of members of Council only 5,793 were returned, a much smaller proportion than in the preceding year. This apparent lack of interest in the Society's affairs is incomprehensible except on the assumption that it was felt by more than two-thirds of the members to be a matter of indifference who represent them on the Council. As a result of the contest, the only change was the return, after a brief interval, of Mr. F. G. Wells in succession to Mr. F. E. Bilson, who had retired after many years' service. At the first meeting of the new Council, Mr. F. Gladstone Hines was elected president, Mr. John Keall vice-president, and Mr. A. Jenkin treasurer. In Scotland, the North British Branch of the Society, with Mr. J. B. McVitae as chairman, has continued its excellent work on behalf of pharmacy in general and the Pharmaceutical Society in particular. Local branches have also continued to manifest their activities. Delegates from the branches have attended special meetings summoned to consider the Pharmacy and Poisons Bill, and later, at Aberdeen, to discuss the supervision of apprenticeship, the possibilities of developing the pharmaceutical side of the chemist's business, and the apparatus required for small-scale galenical manufacture. The British Pharmaceutical Conference was held at Aberdeen, with Mr. Herbert Skinner as chairman. Though the subject of his

address was nominally "Hospital

**BRITISH PHARMACEUTICAL SERVICE,**" its scope **PHARMACEUTICAL** was really much wider, the object **CONFERENCE** aimed at being the awakening of

officinal pharmacists to the neces-

sity that at present exists for their keeping pace with the developments of medical science. His statement that "the pharmacist who closes down his laboratory is losing the soul of pharmacy" seized upon the imagination of the Press generally, and will not readily be forgotten. An excellent list of papers, the highest number on record, was contributed to the science sessions of the Conference, and this year's meeting, regarded as a whole, proved one of the most successful to be recorded. The arrangements reflected great credit upon the local organisers, who succeeded in their aim of making this the occasion of a real Highland welcome. An invitation for the 1933 Conference to be held in London was accepted with enthusiasm. Consideration is being given, we understand, to the much-needed rearrangement of the annual programme so as to permit of less clashing of meetings of delegates with the science sessions. Turning now to Ireland, we find recorded evidence of much vitality both south and north. At

the annual meeting of the Pharmaceutical Society of Ireland the election result showed

**EVENTS IN IRELAND** that two members of the Council had been rejected by the electors in favour of Miss F. M. Flood and Mr.

D. W. P. Boyd. Subsequently Mr. P. Brooke Kelly was re-elected president, Mr. P. J. Fielding was elected vice-president, and Mr. F. J. Fitzpatrick treasurer. No progress has been made with the long-expected Irish Free State Pharmacy Bill. The Dublin Retail Drug Association continues to function, with Mr. James Duggan as president, Mr. T. C. Scott as vice-president, and Mr. McLean Lee as treasurer. In Belfast also there has been marked activity in pharmaceutical circles. The election for the Council of the Pharmaceutical Society of Northern Ireland resulted in the rejection of two of the sitting members, Mr. H. F. Moore being elected as a new member, while Mr. F. Storey was chosen as a pharmacists' instead of a druggists' representative for the first time. Later, Mr. R. I. Edwards was elected president, Mr. John Maxwell vice-president, and Mr. H. Todd treasurer. A notable event has been the establishment at Queen's University, Belfast, of a degree of B.Sc. in pharmaceutics. Another event of importance has been the amalgamation of the North Irish Pharmacists' Association with the Ulster Retail Drug Trade Association, under the name of the latter, with Mr. A. G. Davis as the first president of the new body. On this side of the water there has also been an important change of name, the Retail Pharmacists' Union having become the National Pharmaceutical Union, of which Mr. F. D. Phillips is now the chairman of Executive. The Union has been busily engaged during the year in taking such action as was considered necessary for the protection of the business interests of chemists and druggists. Agreement with the Pharmaceutical Society on the subject of the Pharmacy and Poisons Bill was only arrived at after prolonged consideration and discussion, and after provision had been made for necessary safeguards. The retention of Clause 4 (4) of the chemists' terms of service was persistently urged, despite the fact that the new Minister of Health had expressed an intention of revoking it, and retention was ultimately made a condition of acceptance of the fresh terms of service proposed by the Minister. After prolonged consideration the Minister undertook that the clause should not be revoked while he continued in office, and this removed the only obstacle remaining in the way of acceptance of the terms of service offered for the next three years. As now agreed, the terms of payment provide for a basic figure of 2s. 9 $\frac{1}{2}$ d. per insured person, with the addition to the drug fund of half the amount by which it will be reduced from January 1, 1933, if the reduced fund proves insufficient to pay the chemists' bills after deducting the amount of the national economy cut. Arrangements have also been made by the Union, in agreement with the British Medical Association, that the British Pharmacopœia, 1932, shall not come into force for National Health Insurance dispensing purposes, unless specially indicated by prescribers, until March 1, by which time it is hoped to have completed the revision of the National

Formulary for Insurance Purposes. The same provision will apply in Northern Ireland, but not in Scotland, where the General Council of Panel Chemists has continued to make the best bargain possible for Scottish chemists on the basis of the original scheme of payment. Further action on behalf of the officinal pharmacist will be manifested through the publicity scheme which is to be operated by the Union with the object of making the public realise that the qualified pharmacist is the person properly equipped to dispense medicines and perform other pharmaceutical functions. The Chemists' Defence Association and the Scottish Pharmaceutical Federation have also been kept busy on behalf of chemists and druggists during the year, while the Proprietary Articles Trade Association has missed no opportunity of fulfilling the main object of its existence. The Pharmacopœia Commission having completed its work of revising the British Pharmacopœia, it was announced that the new

Pharmacopœia would be published

**THE BRITISH PHARMACOPŒIA** and come into force on September 30, and that in order to obviate any possible inconvenience, advance

copies would be available for inspection at various centres from July 4 onwards. The book was reviewed at length in our pages, where it has also been subjected to extended critical survey by writers of repute, in addition to which the question of the legality of official standardisation has been raised because of conflict between the requirements of the British Pharmacopœia, 1932, and the provisions of the Food and Drugs (Adulteration) Act. Further, we have suggested that revision of the Pharmacopœia should henceforth be continuous. This suggestion was also advanced by Mr. Herbert Skinner, in his address as chairman of the British Pharmaceutical Conference, and it will have been noted that arrangements have since been made for reappointment of a Pharmacopœia Commission, which will presumably carry on the work of revision without appreciable break. The existing Commission is to remain in office until September 30, 1933, to deal with matters arising out of the text of the new book. Meanwhile the chairman, members and secretary of the Commission, and all who have co-operated with them in its elaboration, have been thanked on behalf of the General Medical Council for their assiduous and public-spirited devotion to the task of preparing the text of the Pharmacopœia. The list of preparations in the Third Schedule to the Dangerous Drugs (Consolidation) Regulations, 1928, has been amended by Order so as to bring the list into accord with the new Pharmacopœia. As usual, legal cases of special interest to the drug trade have been fully reported in our pages during the year. In one case, the Pharmaceutical Society failed to satisfy the Courts that a chemist and druggist was not *bona fide* conducting his business when it was left for forty-two hours a week in charge of an unqualified assistant while the proprietor himself was employed elsewhere. The Pharmaceutical Society also lost its appeal in a case in which a disinfectant labelled for agricultural and horticultural use was sold by an unqualified person, the judges holding that the preparation came within

the exceptions in Part II of the Schedule of the Pharmacy Act, 1908. In another case, in which

**LEGAL DECISIONS** the General Medical Council brought an action against a limited company for printing the letters "B.P." in a prominent manner upon the labels of their preparations, it was held that the Council had failed to prove any facts from which any possibility of injury to the property in the British Pharmacopœia could be inferred. The construction of an advertisement came under consideration in the King's Bench Division, when a large sum was claimed on an alleged guarantee that a comb would restore grey hair to its original colour in ten days. It was pleaded in defence that the words of the advertisement did not mean what the plaintiff said they meant; but judgment was given for the plaintiff. In a North London case in which black currant pastilles, so-called, were stated to contain no genuine black currant juice, the defendant was fined, the magistrate holding that if a person asked for a black currant pastille, he expected to get an article which contained some identifiable ingredient originating from black currant. At Glasgow the sale as almond oil of oil from peach or apricot kernels was made the subject of a penalty, the stipendiary holding that when almond oil is demanded *simpliciter* and something different from that commodity as it is defined in the British Pharmacopœia is supplied, the seller contravenes the statute. Numerous cases have been before the Courts in which injunctions were granted for infringements of trade marks by using the names of well-known proprietary preparations except in connection with the sale of those medicines. Convictions under the Pharmacy Acts (Ireland) and the Sale of Poisons (Ireland) Act have also been recorded. In a communication received from the Commissioners of Customs and Excise, early in the year, it was intimated that, in spite of the decision in the case of the Attorney-General v. Lewis & Burrows, Ltd., no alteration has been made in the conditions under which they are prepared to recognise claims to exemption from medicine-stamp duty. As we pointed out at the time the conditions of exemption referred to in the letter as being still insisted upon are:—(1) The disclosure of the complete formula upon all labels, cartons, or other containers of the article; (2) a statement of equal publicity that no proprietary rights are claimed in the preparation of the medicine; and (3) that the required statements on the labels must be legible and conspicuous. In view of the judgment of Mr. Justice Rowlett in the Lewis & Burrows case, the fact that the Commissioners should persist in their declared policy is calculated to provoke surprise that they should think themselves authorised to disregard that judgment. Commenting on the judgment, in the course of an instructive article on the origin and history of the patent-medicine stamp duty, Mr. T. Hynes remarked that it was a matter for congratulation that Mr. Justice Rowlett should have found himself able to adopt so unreservedly the opinions of the judges in the case of Farmer v. Glyn-Jones. He then proceeded to suggest that, when any attempt is made

to recast what the judge called the "mass of confused, obsolete verbiage" comprised in the Medicine Stamp Acts, those engaged in the task will find their work sensibly lightened if they approach it in the spirit indicated by these decisions. The same remark might very appropriately be applied to the Commissioners of Customs and Excise, in their task of interpreting and administering the law on the subject. Another writer on medicine-stamp law during the year under review has been Mr. William Johnston, who directed attention to some unsolved problems, and insisted that the mysteries of the

**VALUABLE ARTICLES** chemist's exemption have not yet been entirely explained. Other writers who have contributed to our columns have dealt with a wide

range of subjects. Dr. J. F. Tocher, in a new year's message, suggested that while chemists and druggists have their trials and difficulties, they are nevertheless better educated than their predecessors, better paid, and better off. Mr. John Humphrey has discussed on the needs of pharmacy and the paradoxical situation that, though trained pharmacists do not at present receive adequate support from the British public, there is actually public need for more pharmacists in general practice. Mr. T. Edward Lescher has ably surveyed the present position in an address on the drift of the times and pharmacy. Mr. T. McLachlan has written on gland products, Mr. Herbert Skinner and Mr. H. N. Linstead on pharmacy in the United States, Mr. A. L. Taylor on an antiseptic lubricant for surgical glass, Mr. A. B. Searle on the use of kaolin in pharmacy and perfumery, Mr. H. S. Redgrove on perfumery problems, Mr. A. W. Lupton on colloidal chemistry, Mr. F. G. Hobart on solution phenomena in pharmacy, Mr. John Butler on dispensing, and Mr. J. R. Dean on the perfuming of industrial spirit. Mr. T. Hynes has explained how co-operative societies, compared with private traders, enjoy a privileged position as regards liability to income tax; Dr. Julius Grant has written at length on the examination of drugs and chemicals by ultra-violet light; and Mr. T. Thorne Baker has explained the position of colour photography, and commented usefully on the treatment of photographic stock. An important article on solvents and cleaning materials should have proved of considerable value to many of our readers, as also should Mr. Herbert Skinner's description of modern sterilisation methods, practical acquaintance with which is part of the requirements of the new British Pharmacopœia. Other communications dealing specially with pharmacopeial matters are the articles of Mr. E. J. Parry on the official oils, fats, waxes, resins and balsams, and Mr. A. Whatmough on the official biological and biochemical preparations; while Dr. C. H. Hampshire has discussed the new Pharmacopœia as a whole. Special articles of practical value have dealt with the subjects of shopfitting, opening a pharmacy, modern lighting effects, topical displays, prescription-pricing, chemists' and medical exhibitions, the British Industries Fair, visits of inspection to leading manufacturing and wholesale establishments, the cod-liver oil industry, and pharmaceutical

industry in Scotland. Important happenings of the year, all duly recorded in our columns, have included publication of the report of the Indian Drugs Inquiry Committee on proposed control over drugs and pharmacy in India; the report of the Royal Commission on Licensing, dealing with medicines containing spirit; the South African Pharmaceutical Conference; the centenary of the British Medical Association; the establishment of international vitamin standards; the British Report on Dangerous Drugs to the League of Nations; publication of the twentieth edition of Martindale and Westcott's "Extra Pharmacopœia"; the meeting of the British Association at York; the issue of new Methylated Spirit Regulations; and recognition by the London County Council of pharmacists as the only persons to be employed as dispensers in hospitals and institutions. Our educational number was as fully up to date as usual; our perfume and veterinary numbers were received

**SPECIAL ISSUES** with much commendation; and our annual Special Issue was once more in the front rank of illustrated journalism.

We have continued to keep our readers fully informed respecting scientific and technical matters, changes in buying and selling prices, parliamentary affairs, and everything else of importance in connection with the drug trade in this country and abroad. After attending the Canadian-American Pharmaceutical Convention at Toronto, Mr. Skinner returned in time to conduct the business of the Aberdeen Conference, and so concluded a period of fifty years of work in and for pharmacy. This was celebrated by a dinner which was attended by a large and representative gathering, and the presentation of a cheque. Other items of news we have recorded included the conferment of the honour of knighthood on Dr. H. H. Dale, Mr. Patrick Geddes, Mr. E. W. Morris, Dr. Brackenbury, Mr. R. L. Mond, Professor W. W. Smith, Mr. John Sumner, and Mr. Henry S. Wellcome, who has also been elected an honorary fellow of the Royal College of Surgeons and a fellow of the Royal Society. Mr. W. Philip Want retired from the editorship of "The British and Colonial Pharmacist," after many years of service, and was succeeded by Mr. A. C. Merrin; Dr. F. J. Waldo, coroner for the City of London and Southwark, retired after thirty years' service; Messrs. F. Gladstone Hines and Herbert Skinner were elected honorary members of the American Pharmaceutical Association; and Mr. F. W. Bates, of Stretford, had the degree of M.A. conferred upon him by Manchester University in recognition of his distinguished public service. Sir Henry Dale has been the recipient of the Harrison medal, and dealt with some therapeutic problems of the future in the Harrison memorial lecture. Our obituary column has included the names of a number of prominent persons, first of whom, perhaps, should be placed Mr. Walter Hills, a former president of the Pharmaceutical Society, who represented pharmacy on the

**OBITUARY** Departmental Committee appointed to consider Schedule A of the Pharmacy Act, 1868, and in that capacity contended that no real ground had been shown for the relaxation of the restrictions imposed

by the Act on behalf of the public. Next in order we come to Mr. James L. Ewing, formerly chairman of the Executive of the North British Branch of the Pharmaceutical Society, who occupied a prominent public position in Edinburgh. Mr. C. H. Kirby, for many years solicitor to the P.A.T.A., the C.D.A. and the R.P.U., possessed a remarkable knowledge of the Medicine Stamp Acts and the Companies Acts. Mr. D. M. Watson, a past-president of the Pharmaceutical Society of Ireland, had long been a member of the Council of the P.A.T.A., and was highly esteemed by a large circle of friends. Dr. G. Claridge Druce, M.A., F.R.S., a distinguished Oxford pharmacist, won world-wide fame as a botanist; Mr. John Wild, of Manchester, had a fine record of pharmaceutical activities; Mr. F. J. Gibson, of Wolverhampton, was formerly a member of the Council of the Pharmaceutical Society; Sir Patrick Geddes, the noted botanist, did not long survive the receipt of his knighthood; Mr. George Eastman was the founder of Kodak, Ltd., and presented a new dental clinic to the Royal Free Hospital, London, at a cost of £300,000; Mr. Arthur L. Savory was at one time a member of the Council of the Pharmaceutical Society; Mrs. Woolley will be remembered for the important part she took in entertaining visitors to the British Pharmaceutical Conference at Manchester last year; Mr. G. S. V. Wills was the founder of one of the best-known private schools of pharmacy, and had lived to a ripe old age; Dr. J. C. Thresh, formerly in business as a pharmacist at Buxton, was medical officer of health for Essex and an authority on the subject of water analysis; Mr. Robert Wright was Dr. Thresh's successor at Buxton and a president of the British Pharmaceutical Conference; Mr. George Whitfield, a former Mayor of Scarborough, will be remembered as chairman of the local Conference Committee in 1921; Mr. John D. Marshall was formerly managing director of John Bell & Croyden, Ltd., and had contributed to our columns accounts of many of his foreign travels; Mr. C. W. Ridyard took a prominent part in the direction of National Health Insurance affairs in Derbyshire; Sir William Pearce, a manufacturing chemist, had represented Limehouse in Parliament; Mr. Jabez A. Jones was a founder of the Cardiff and District Pharmaceutical Association and had occupied a prominent position in local municipal affairs. Other deaths recorded during the year have included those of Mr. Samuel Suffern, twice president of the Chemists' and Druggists' Society of Ireland; Mr. J. D. Carse, a founder of the Ulster Retail Drug Trade Association; Mr. George Brown, a former member of the Council of the Pharmaceutical Society of Ireland; Mr. James Michie, a former president of the Pharmaceutical Society of Ireland; Mr. A. C. Chapman, a well-known analyst and former president of the Institute of Chemistry; Mr. J. H. Dinwoodie, the first president of the Transvaal Pharmacy Board; Mr. R. Blair, a past-president of the Pharmaceutical Society of Ireland; Mr. T. Walton, of Sunderland, a photographer and rose-grower; Mr. W. Edmondson, of the firm of Severs & Bateson, Kendal; Mr. John Taylor, a former president of the Torquay and District Pharmacists' Association; Mr. John Murdoch,

Eastbourne, who was well-known in drug and chemical trade circles; Mr. Walter Boyd, a former director of Boileau & Boyd, Ltd.; Mr. T. J. Hughes, a past-president of the Pharmaceutical Society of South Africa; Mr. Thomas Harley, Perth, who had built up a successful manufacturing business; Mr. Thomas Waide, Leeds, founder of a chemists' printers' business; Mr. James D. Petrie, president of the Perthshire Pharmacists' Association; Mr. Robert Gledhill, Dewsbury; Mr. J. H. Webb, a highly esteemed Bedfordshire pharmacist; Mr. H. Huxley Mason, Croydon; Major G. W. Harris, Canterbury; Mr. R. Wynn-Williams, Dolgelly; and Mr. T. Alexander, formerly dispenser to the Edinburgh Royal Infirmary.

## Pharmaceutical Society of Great Britain Branch Meetings

**Nottingham.**—A well-attended meeting of the Nottingham and District Branch was held on December 13, Mr. F. W. Shepherd in the chair. Mr. H. A. Turner, Ph.C. (Pharmacy Department, University College) delivered an address on *The Sterilisation Processes of the British Pharmacopœia*. This proved to be most interesting and instructive. The speaker urged pharmacists to familiarise themselves with the different processes, as they were likely to play an increasing part in pharmacy in the future, and there was no reason why they should not be conducted in ordinary premises. Great interest was shown in exhibits of various cultures, particularly of plates exposed in several pharmacies. Questions were raised by Mrs. Wright and Messrs. Beilby, Bates, Coulthard and Clay. A hearty vote of thanks was accorded to Mr. Turner on the proposition of Mr. C. E. Reynolds.

**Bath.**—A meeting of the Bath and District Branch was held on December 7, when Mr. D. J. Williams, B.Sc., Ph.C., delivered a lecture on *Scientific Developments and Their Effect on the B.P., 1932*. The lecture was attended by a large number of members and students from local colleges. The president (Mr. W. H. Hallett) mentioned the lecturer's intimate connection with the Bath Branch. Mr. Williams, after dealing briefly with the main differences between the 1932 B.P. and its predecessors, mentioned the resemblance between it and the United States Pharmacopœia. He drew attention to the international exchange of scientific thought and the International Agreement. The importance of physical methods of standardisation was evident, and attention was drawn to the frequent use of the properties of light, notably in colorimetry. The principle of nephelometry was explained, and reference made to the limit tests for sulphates and chlorides. Standardisation of apparatus, said Mr. Williams, was an advance which brought the Pharmacopœia up to modern ideas. This was exemplified in the boiling-point apparatus, viscosity tube and extraction apparatus. Demonstrations were given of the viscosity tube and Redwood's viscometer. Mr. Williams proceeded to deal with the methods of sterilisation described in the Pharmacopœia, giving descriptions of apparatus with actual specimens. The lecture concluded with a brief discussion of the methods of biological standardisation of vitamins, endocrine gland products, and antitoxins, and serums and vaccines. During the discussion which followed, Mr. W. H. Hallett complimented the lecturer on his grasp of the subject, and suggested that a further lecture on similar lines in the near future would be very acceptable. He also suggested that pharmacists, particularly the younger ones, should spare no pains to master the newer aspects of pharmacy. Mr. Williams, in reply to a member, explained the change which occurred on keeping the new liquor arsenicalis.

# The Progress of Pharmacy and Allied Sciences

## PHARMACY

**Syrup of Ferrous Chloride.** — J. Gorton ("Svensk Farmaceutisk Tidskrift," November 10, 1932) gives the following formula for this preparation, which has recently gained favour as a therapeutic agent for administering iron:—

Iron, in powder ..	..	35 gm.
Hydrochloric acid (17 per cent.)	153.6 gm.	
Sugar ..	670 gm.	
Dilute hypophosphorous acid (10 per cent.) ..	..	10 gm.
Distilled water ..	..	to 1000 c.c.

Prepare in the same way as Syrup of Ferrous Iodide.

**Ephedrine in Oily Solution.** — Dr. S. L. Hilton ("Journal of the American Pharmaceutical Association," xxi, 10, 1113) states that he has found the following formula for the compound solution satisfactory:—

Ephedrine ..	..	..	..	..	1.00
Camphor ..	..	..	..	..	0.20
Menthol ..	..	..	..	..	0.20
Methyl salicylate ..	..	..	..	..	0.05
Oil of cinnamon ..	..	..	..	..	0.05
Liquid petrolatum, light, sufficient to make ..	..	..	..	..	100 c.c.

Triturate the camphor and menthol to a liquid, add the methyl salicylate and oil of cinnamon, then the ephedrine and liquid petrolatum (light) to make 100 c.c. The solution may be heated to not over 40° C. to facilitate solution.

**Coating of Capsules.** — W. J. Husa and L. Magid ("Journal of the American Pharmaceutical Association," xxi, 10, 1030), in the course of experiments with coatings for capsules, found that when a small amount of stearic acid was added to a mixture of melted salol and an alcoholic solution of shellac, and the mixture sprayed on capsules, a good coat was obtained having ideal solubility, as it resisted gastric fluid for six hours, but disintegrated in intestinal fluid in half an hour. The formula and directions for this coating are as follows:—Salol, 22.5 gm.; stearic acid, 2.5 gm.; 10 per cent. alcoholic solution of orange shellac, 10.0 c.c. Melt the salol and stearic acid on a water bath and add (all at once) the alcoholic solution of shellac. Allow to stand for a while before stirring (lest the shellac be precipitated) and then mix well by shaking. Spray the mixture with a fine spraying atomiser on capsules contained in a glass mortar. The capsules should be dispensed with cotton-wool.

**Austrian Formulas.** — The following articles have been proposed for inclusion in the new edition of the Austrian Pharmacopœia, now in course of preparation:—

**LIQUOR CADINI DETERGENS.—SOLUTION OF JUNIPER TAR.** —

Primrose root ..	..	..	20 gm.
Alcohol (70 per cent.) ..	..	..	200 gm.

Macerate for eight days, press, and to 100 gm. of the liquid add 5 gm. of oil of cade. Set aside for eight days, with frequent agitation, then filter the supernatant liquid.

### UNGUENTUM SIMPLEX.—SIMPLE OINTMENT.—

Lard ..	..	..	90 gm.
Cetyl alcohol ..	..	..	10 gm.

Melt together on a water bath, strain if necessary and mix to produce an ointment.

### UNGUENTUM ZINCI OXYDATI.—ZINC OINTMENT.—

Zinc oxide ..	..	..	10 gm.
Sesame oil ..	..	..	5 gm.
Cetyl alcohol ..	..	..	10 gm.
Lard ..	..	..	75 gm.

Triturate the zinc oxide with the sesame oil. Melt the cetyl alcohol and lard on a water bath, strain if necessary, and when nearly cold add to the mixture of zinc oxide and sesame oil with constant agitation.

**Danish Formulas.** — The following preparations have been added to the formulary of the Danish Association of Pharmacists:—

### EMULSIO PARAFFINI LIQVIDI DAK.—PARAFFIN EMULSION.—

Tragacanth, in fine powder ..	..	5 gm.
Solbro ..	..	0.5 gm.
Alcohol (90 per cent.) ..	..	10 gm.
Glycerin ..	..	150 gm.
Distilled water ..	..	304.5 gm.
Mucilage of acacia ..	..	30 gm.
Liquid paraffin ..	..	500 gm.

Dissolve the solbro in the alcohol, add the tragacanth, glycerin and water. Set aside for a day or two, with occasional agitation. Then add the mucilage of acacia and the liquid paraffin and make an emulsion.

### LIQUOR BARBIPHENI COMPOSITUS DAK.—COMPOUND SOLUTION OF PHENYLETHYLBARBITURIC ACID.—

Phenylethylbarbituric acid ..	..	20 gm.
Amylene hydrate ..	..	38 gm.
Ethyl urethane ..	..	35 gm.
Distilled water ..	..	7 gm.

Maintain the mixture in a well-closed flask at a temperature of 20° to 30° C. until solution is effected; filter through a sterile bacteria-proof filter and sterilise.

### PARISATIN DAK.—PARAFFIN EMULSION WITH ACET-PHENOLISATIN.—

Acetphenolisatin ..	..	0.66 gm.
Paraffin emulsion DAK ..	..	1000 gm.

Mix the acetphenolisatin with the mucilage of acacia and proceed as directed under Emulsio Paraffini Liqvidi DAK.

### RECTOL DAK.—CHLORBUTOL OINTMENT.—

Chlorbutol ..	..	..	30 gm.
Calomel ..	..	..	30 gm.
Liquid extract of hydrastis ..	..	..	12 gm.
Extract of hamamelis ..	..	..	15 gm.
Liquid paraffin ..	..	..	173 gm.
White soft paraffin ..	..	..	200 gm.
Wool fat ..	..	..	540 gm.

Mix the chlorbutol with the calomel in a mortar and add the previously molten ointment basis when nearly cold. Then incorporate the extract of hamamelis and the liquid extract of hydrastis and fill in tubes provided with a rectal tube.

# The Progress of Pharmacy and Allied Sciences

## SOLUTION OF MORPHINE CITRATE DAK FOR HYPODERMIC INJECTION.—

Morphine .. .. ..	4.05 gm.
Citric acid .. .. ..	2.4 gm.
Sodium benzoate .. .. ..	0.1 gm.
N/1 solution of sodium hydroxide .. .. ..	10 c.c.
Distilled water .. .. ..	to 100 c.c.

Dissolve the morphine and the citric acid in about 80 gm. of water, add the normal solution of sodium hydroxide and the sodium benzoate, previously dissolved in a small amount of water, and complete the volume to 100 c.c. by the addition of distilled water. Filter and sterilise the solution by heating to 100° C. for one hour.

## SOLUTION OF MORPHINE CITRATE DAK FOR INTRAVENOUS INJECTION.—

Morphine .. .. ..	1.62 gm.
Citric acid .. .. ..	2.4 gm.
Sodium benzoate .. .. ..	0.1 gm.
N/1 solution of sodium hydroxide .. .. ..	18 c.c.
Distilled water .. .. ..	to 100 c.c.

Proceed as above, dissolving the morphine and citric acid in about 70 gm. of water.

## TABLETTÆ JOD-THEOBROMINI DAK.—TABLETS OF THEOBROMINE WITH POTASSIUM IODIDE.—

Theobromino .. .. ..	500 gm.
Arrowroot .. .. ..	113 gm.
Solution of gelatin (3 per cent.)	200 gm. (about)
Potassium iodide .. .. ..	50 gm.
Hard paraffin .. .. ..	1 gm.
Ether .. .. ..	19 gm.
Talc .. .. ..	30 gm.

Mix the theobromine and arrowroot, moisten with the solution of gelatin and pass through a sieve. Dry the granular mass at a temperature of 35° to 40° C. Add the potassium iodide to a solution of the hard paraffin in ether, allow the ether to dissipate and then pass the mass through a sieve. Mix 619 gm. of the granular mass, 51 gm. of the paraffined potassium iodide, and 30 gm. of talc and divide into 1,000 tablets, each weighing 0.7 gm., and containing 0.5 gm. of theobromine and 0.05 gm. of potassium iodide.

## URISALIN DAK.—

Sodium chloride .. .. ..	15 gm.
Lithium citrate .. .. ..	20 gm.
Sodium sulphate, exsiccated ..	295 gm.
Citric acid .. .. ..	300 gm.
Sodium bicarbonate .. .. ..	370 gm.
Absolute alcohol .. .. ..	to 1000 gm.

Moisten the mixed powders with absolute alcohol (approximately 110 gm.), then granulate and finally dry the product at a temperature of 30° to 40° C.

## ANALYTICAL CHEMISTRY

**Direct Determination of Urea.**—J. F. Barrett and E. B. Jones ("Biochemical Journal," xxvi, 4, 1246) describe a method for the routine estimation of urea in urine based on the formation of dianthylurea. Interfering substances are removed from the urine with ferric chloride and sodium bicarbonate, and the urea is precipitated from the filtrate by xanthhydrol. The precipitate is centrifuged in the presence of barium sulphate, and its nitrogen content determined colorimetrically after a micro-Kjeldahl digestion.

**Microscopical Identification of Ephedrine.**—The purpose of this paper, by F. Grill ("Journal of the American Pharmaceutical Association," xxi, 10, 1012), is to present a means of identifying ephedrine by the formation of characteristic crystals, using nitrous acid. A solution of ephedrine hydrochloride (1-100) was treated as follows:—To one drop of the ephedrine solution on a slide, add one drop of a freshly prepared saturated solution of potassium nitrate, and one drop of a 6 N solution of sulphuric acid. An amorphous

white precipitate was formed. After the liquid had evaporated, long crystals, with or without terminal branching, were observed. The white precipitate does not always appear. Ephedrine hydrochloride, states the author, reacts with nitrous acid yielding a product which is, perhaps, a nitroso compound analogous to the nitroso compounds formed by secondary amines of the aliphatic series and nitrous acid. The reaction appears to give characteristic crystals for ephedrine, and the method is rapid and easy to carry out. The paper is illustrated by photomicrographs.

**New Rosaniline Reagent for Aldehydes.**—H. Schibsted ("Industrial and Engineering Chemistry," Analytical Edition, 4, 2, 204) describes an improved rosaniline reagent which is specific for fatty glyceride aldehydes and is twenty times as sensitive as Schiff reagent or the Kreis test for rancidity in fats. The reagent consists of a 1-per-cent. solution of rosaniline hydrochloride in 50-per-cent. alcohol, to which sulphur dioxide is added in the proportion of 0.45 mole per mole of rosaniline hydrochloride. It is made by adding 20 grams of pure rosaniline hydrochloride to 600 c.c. of absolute alcohol and shaking vigorously to dissolve. After making up to 1 litre with more alcohol, the solution is allowed to stand for several days for organic impurities and salt to sediment out. To 500 c.c. of the clear rosaniline solution there is added 133 c.c. of 0.1 M aqueous solution of sulphur dioxide (6.4 grams per litre) and sufficient distilled water to produce one litre of reagent. The fat to be tested is dissolved in 25 c.c. of specially purified petroleum ether, and 5 c.c. of reagent is added, and the colour developed by rotating the closed vessel for four minutes (preferably by attaching to a rotating disc turning at 30 r.p.m.). After standing for one to two hours a colorimetric measurement is made against a 0.001-per-cent. cresol red solution (buffered to PH 8.3), to which standard an arbitrary value of 100 is assigned.

## BIOLOGICAL CHEMISTRY

**Bee-fertility and Vitamin E.**—L. Hill and E. F. Burdett ("Nature," 3284, 540) find that the "royal jelly" used solely for feeding queen bees when actively laying eggs contains sufficient vitamin E to prevent sterility in rats to which it is fed. The experiments open up a new avenue of research for bee-keepers, the suggestion being that a larva destined to become a queen is kept on a diet of royal jelly, while withholding it results in the larva becoming a worker bee. Royal jelly is generally regarded as a secretion from pharyngeal glands, but it is surmised that pollen is the ultimate source of the fertility vitamin.

**International Vitamin B<sub>1</sub> Standard.**—H. Chick and H. M. Jackson ("Biochemical Journal," XXVI, 4, 1223) report that the preparation adopted as the International Standard for antineuritic vitamin B<sub>1</sub> is exceedingly potent as well as being convenient to handle and easy to administer. The preparation is the adsorption product upon fuller's earth obtained from an acid watery extract of rice polishings. The standard preparation is made in Java at the Medical Laboratory, Batavia. The daily rat dose is about 10 mgm., and its vitamin B<sub>1</sub> content is negligible in comparison with vitamin B<sub>1</sub> potency. The material shows little, if any, deterioration in strength after storage for a year at 0° C., room temperature, and 37° C.

**Irradiated Ergosterol Contrasted with Natural Vitamin D.**—H. Steenbock, S. W. F. Kletzien and J. G. Halpin ("Journal of Biological Chemistry," 97, 249) conclude from tests on normal bone production in chickens that these indicate the vitamin D of irradiated ergosterol is a different substance from that of cod-liver oil. Whereas normal bone production follows inclusion of 1 per cent. of normal cod-liver oil in the diet, it requires 40-120 per cent. equivalence as cod-liver oil of irradiated ergosterol. Excessive doses of irradiated ergosterol give rise to a toxicity manifested by anorexia.

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loss in body weight, increase in serum calcium and decrease in serum phosphorus.

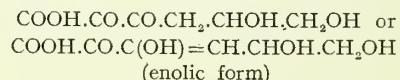
**Halibut-liver Oil.**—A. D. Emmett and others ("Industrial and Engineering Chemistry," 24, 9, 1073) have made a study of halibut-liver oil (prepared by a new commercial process) in respect of vitamin potency, physical constants and tolerance. The vitamin-A potency per gram of halibut-liver oils ranged from 37,500 to 62,500 units per gram (or 75 to 125 times cod-liver oil potency). The vitamin-D activity varied from 2,000 to 3,333 units, which places halibut-liver oil in a high position among natural sources of the antirachitic vitamin. The specific gravity (0.927) and saponification number of halibut-liver oil are essentially the same as those for cod-liver oil, but the free fatty acids and unsaponifiable matter are decidedly higher in halibut-liver oil. Tolerance tests indicate that halibut-liver oil can be administered with impunity from a hyper-vitaminosis standpoint.

**Determination of Vitamin D.**—E. M. Hume, M. Pickersgill and M. M. Gaffkin ("Biochemical Journal," 26, 2, 418) have constructed a scale correlating prophylactic doses of the international standard for vitamin D with the percentage of ash in bones of young rats maintained on a rachitogenic diet. The values for percentage ash plotted against the logarithms of the doses reveal a linear relationship showing that calcification advances in arithmetical progression when dose increases in geometrical ratio. R. B. Bourdillon and H. M. Bruce (loc. cit., 566) describe a radiographic scale for estimation of vitamin D. The error in determination is greater than with bone analysis, but the total error over a given number of rats is roughly equal in the two methods. It is possible to secure greater accuracy with radiographic measurement, owing to decreased labour making it easy to use a larger number of animals.

**Enzyme Specificity.**—Professor Waldschmidt-Leitz, during a discussion on recent advances in the study of enzymes at a meeting of the Royal Society, described instances of specificity of peptidases in support of Willstätter's view that an enzyme consists of an active chemical group and a colloidal carrier. The peptidases consist of three main groups:—(1) Amino-polypeptidases which only hydrolyse peptides containing a free amino group; (2) carboxy-polypeptidases requiring the presence of a carboxyl group; and (3) di-peptidases attacking di-peptides only. The substrate must always have a peptide linkage, and this is attached to the enzyme at two points, one of which varies (as above) with the nature of the polypeptidase. The enzyme therefore possesses two combining groups spaced and oriented in a manner which implies rigid chemical structure of the enzyme and correlation with the structure of the substrate.

**Vitamin A in the Human Liver.**—T. Moore has determined, by the antimony trichloride method, the amount of vitamin A in over 300 specimens of human liver ("Lancet," 5691, 669). The author finds that the vitamin-A reserve varied over an extremely wide range even among healthy subjects dying from accidental causes. He names the diseases in which normal reserves were noticed, and those in which the reserves tended to be subnormal. Apparently the only disease in which reserves much above normal occurred was diabetes. He concludes:—"Since adequate vitamin-A reserves were frequently observed in a wide variety of infective conditions, it is plain that vitamin A should not be regarded as a positive anti-infective agent, indiscriminate in action. The term 'anti-infective' is only justifiable in a sense complementary to the fact that deficiency of vitamin A leads to subnormal powers of resistance. The trend of the present work suggests that partial vitamin-A deficiency, or the state of multiple malnutrition which it must usually imply, may be of importance in the aetiology of some types of infection under clinical conditions."

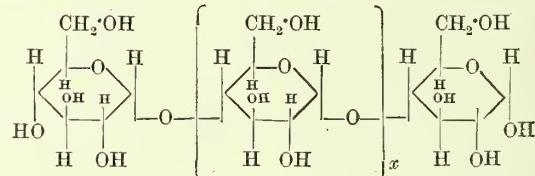
**Constitution of Hexuronic Acid.**—E. G. Cox, E. L. Hirst and R. J. W. Reynolds ("Nature," 3293, 888) put forward observations which indicate that hexuronic acid has the following chemical structure:—



Hexuronic acid contains three potential hydroxyl groups, because it can react in enolic as well as alcoholic modification. A characteristic property of hexuronic acid is oxidation at a double bond by iodine in neutral or acid aqueous solution. The intervention of water is essential, and the product (which is not a di-iodide) can be reduced to hexuronic acid. The biological activity of hexuronic acid is probably due to this double function of oxidation and reduction, which is unique among purely carbon compounds and is reminiscent of the behaviour of glutathione. Hexuronic acid and its salts show an intense absorption band with head at about  $265\mu$ . The absorption spectrum of decitrated lemon juice has been examined, and it is estimated that the hexuronic acid content corresponds with the recorded evaluation of the antiscorbutic activity as hexuronic acid.

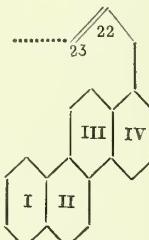
## PURE CHEMISTRY AND PHYSICS

**Molecular Structure of Glycogen.**—W. N. Haworth and E. G. V. Percival ("Journal of the Chemical Society," August 1932, 2277) deduce that twelve is the minimum number of glucose units in natural glycogen. The use of alkali for extracting this polysaccharide from liver results in commercial specimens having a minimum number of units which is probably not much exceeded. The structure of glycogen is expressed, with minimum value for  $x$  as 10, as follows:—



The corresponding molecular weight of glycogen approximates to 2,500.

**Carbon Skeleton of the Sterols.**—J. D. Bernal ("Chemistry and Industry," 51, 20, 466) states that scale models and optical evidence are in favour of Rosenheim and King's graphical formula for ergosterol, which is as follows:—

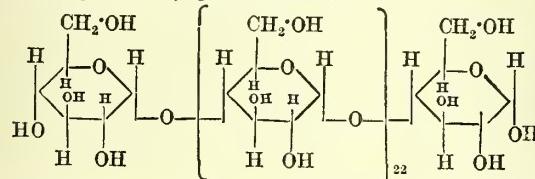


Rosenheim and King (loc. cit., p. 464) claim that this formula accounts for the two "homeless" carbon atoms (by assigning them to positions 22 and 23) and renders unnecessary the previous assumption of a seven-membered ring. The cyclic structure of chrysene in the above formula can be derived from three hexose units, the linking up of which is not beyond the power of the animal organism. It is an established fact that ergosterol can be synthesised by yeasts and moulds from a medium containing a hexose and mineral salts only.

**Structure of Amylose and Amylopectin.**—E. L. Hirst, M. M. T. Plant and M. D. Wilkinson ("Journal of the

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Chemical Society," September, 1932) shed new light upon the structure of starch. This consists essentially of soluble amylose and amylopectin, which is insoluble in cold water and produces starch paste with hot water. The characteristic properties of starch appear to be due to the presence of  $\alpha$ -glucosidic linkages preventing the formation of long straight molecules. Thus the peculiar conformation of the starch macromolecules possesses a great facility for interlocking and aggregation. Amylose in solution presents a more hydrated (and less interlocked) condition than amylopectin, and it is found that free amylose on keeping gradually retrogrades through intermediate stages to amylopectin aggregates. In potato starch both the amylose and amylopectin components consist of macromolecules with an average chain-length of 24 glucose units, viz.:—



The corresponding molecular weight for a unit as above is 5,000.

## BOTANY

**Twisted Trees.**—M. Copigarow ("Nature," 3284, 542) suggests that the solution of the apparent paradox of straight and twisted tree growth is to be sought in the soil rather than heredity. Salts of calcium, barium and strontium, as well as silicates, cause arboreal growth (creeper, bush and tree forms). Calcium is found to yield upright tree-like formations with a corrugated surface. Barium salts produce straight growths with a spiral surface, whilst strontium cause tape-like structures with beautiful spirals. Silicates produce bamboo-like forms. Hence it would seem that tree-twisting is primarily due to local soil peculiarities which have in the course of time modified the structural components of plants.

**Growth in Trees.**—Professor J. H. Priestley, in his presidential address to Section K (Botany) of the British Association at York on September 5, announced that new methods revealed clearly the close dependence of the radial growth of trees upon the buds. Each season growth begins anew in the bud, and thence spreads downwards over the rest of the tree. Cambial activity only begins after the buds begin to grow, and the cambium cells become very liquid, allowing the bark, together with the bast, to be peeled easily from the wood. The new plastic tissues are readily scraped off by a sharp tool, and the new method developed this year consists in examining the long strips of tissues resulting from the resumption of cambial growth. In the needle-leaved softwoods (pines, etc.) the living cells of cambium elongate into thin threads which divide lengthwise, the inner cell changing into a fibrous tracheid. As all the developing tracheids do the same thing to the same extent, the wood is very regular. In broad-leaved hardwoods (sycamore, etc.) the cambium cells are much shorter, and these cut off cells like themselves towards the wood. Later these take in water and expand, vessels being formed by the transverse walls collapsing in vertical series, which may extend many feet. Other cells are squeezed and elongated by the expansion of the vessel-segments. The longer cells thicken later to become fibres. The water supply for a bud commencing growth is drawn from the old wood by osmotic forces developed in the new tissues. The old wood thus acts as a reservoir with a system of pipes terminating in the elongating shoot with its new leaves. In this new picture the machinery by which water is set in motion is the growth of buds and branches. The downward movement of food in the tree appears to be linked with the downward growth of bast, which is likewise formed from the cam-

bium. Thus it is impossible to dissociate the problem of transport of water and food from the processes of growth.

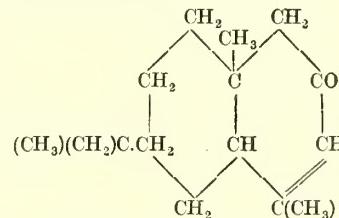
## DENTISTRY

**Stainless Steel Orthodontic Appliances.**—G. M. Anderson ("Dental Cosmos," LXXIV, 10, 1006) has used stainless steel as a substitute for precious metal in the construction of orthodontic appliances, and finds that a fair test of the material indicates great strength, no taste, no ill effect on contact with tooth, and no discolouration of the wire while in the mouth. It is a little more difficult to work than gold, but, the author states, is equally as satisfactory in application. Stainless steel may be soldered using the ordinary orthodontic gold-wire solder with a soft flame and special flux. The flux is potassium fluoride and boric acid powder, equal parts, with a few drops of hydrochloric acid to make a paste.

## ESSENTIAL OILS

**Determination of Citronellal.**—The tenth report of the Essential Oil Subcommittee to the Standing Committee on Uniformity of Analytical Methods deals with the determination of citronellal. The method recommended is as follows:—Sufficient of the oil to account for about 0.8 gm. of citronellal is cooled to  $0^{\circ}$ , and about 10 c.c. of normal solution of hydroxylamine hydrochloride is run in, and the liberated acid is titrated at once with semi-normal alcoholic potash, using a 0.2-per-cent. alcoholic solution of dimethyl yellow (*p*-dimethylaminobenzene) as indicator. Care should be taken not to go beyond the orange colour of the indicator, and the titration should be continued so long as the red colour develops. The flask should then be allowed to stand for an hour and the titration completed at laboratory temperature. The result is multiplied by the factor 1.008 on account of the difference in the end-point of the titration from that of a normal hydroxylamine hydrochloride solution. The results should not vary as between different analysts by more than  $\pm 0.5$  per cent.

**Essential Oil of Eremophila Mitchellii.**—This essential oil has recently been the subject of investigation, the full results of which have not yet been published. That portion of the work dealing with the isolation of several complex ketones from the oil, however, forms the subject of a paper by Bradfield, Penfold and Simonsen ("Journal of the Chemical Society," 1932, 2744). As the authors point out, it is remarkable, in view of the wide distribution of the simpler terpene ketones, that, with the exception of the acyclic ketone doremone, isolated from oil of ammoniacum, no sesquiterpene has, up to the present, been described. The authors have separated from the oil now under consideration a crystalline ketone,  $C_{15}H_{22}O$ , melting at  $41\text{--}42^{\circ}$ , to which they assign the name eremophilone, and two hydroxyketones, 2-hydroxyeremophilone  $C_{15}H_{22}O_2$ , melting at  $66\text{--}67^{\circ}$ ; and 2-hydroxy-1:2-dihydroeremophilone,  $C_{15}H_{22}O_2$ , melting at  $102\text{--}103^{\circ}$ . The authors have been able to determine the constitution of these ketones. It was found that eremophilone, on dehydrogenation with selenium, yielded the hydrocarbon cadalene, so that the nature of its skeleton is at once apparent. Three alternative formulas are given, of which the following corresponds best with all its reactions:—



The authors consider that eremophilone bears the same relationship to  $\alpha$ -selinene as verbenone does to  $\alpha$ -pinene.

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**Varieties of Eucalyptus Radiata.**—A. R. Penfold and F. R. Morrison ("Journal and Proceedings of the Royal Society of New South Wales," 66, 181) draw attention to the occurrence of a number of species of this eucalyptus as determined by the analyses of the essential oils. This eucalyptus is a fairly tall tree, known locally as river white gum. The receipt of a bag of leaves from Nullica (N.S.W.) led to a unique observation. On crushing the leaves between the fingers, some were found to have the characteristic odour of piperitone, by which the species is easily differentiated from other "narrow-leaved peppermints," while others had the pronounced odour of piperitone. The two different forms were separated by crushing each leaf and observing the odour. The examination of the "piperitone" odour leaves showed the existence of a physiological form of *E. radiata*, the characters of the oil very closely resembling that of *E. dives*. This form yielded an essential oil containing 50 per cent. of piperitone, against 5 per cent. in the oil of *E. radiata* as generally known. The essential oils of the separated and the mixed leaves gave the following results on analysis:—

	Yield Per cent.	Refractive S.G. O.R.	Piperitone Index	Per cent.
Variety A ..	2.7	0.901	-59.5°	1.4795 46
Type ..	2.3	0.8866	-36.25°	1.4770 5
Mixed leaves	2.4	0.8926	-39.5°	1.4770 16

Further examination of leaves specially collected from separate trees fully confirmed those observations, the piperitone varying from 6 per cent. up to 52 per cent. The following are the forms of the tree as observed at Nullica:—*E. radiata*.—Type, essential oil contains 5-10 per cent. of piperitone, 60-80 per cent. of phellandrene and piperitol. *E. radiata*.—Variety A, essential oil contains piperitone 50 per cent. and phellandrene 40 per cent. *E. radiata*.—Variety B, essential oil contains piperitone 20-30 per cent., cineol 12-15 per cent., phellandrene 40 per cent., and piperitol.

## FIXED OILS AND FATS

**Oil of Celastrus scandens.**—C. Barkenbus and C. F. Krewson ("Journal of the American Chemical Society," 54, 10, 3993) have investigated the oil from the seed of *Celastrus scandens* and have found an exceptionally large amount of esters of the lower fatty acids. These are stated to consist chiefly of esters of formic and acetic acids, but a small amount of an ester of caproic acid is also present. The percentage composition of the oil is as follows:—Glycerides of linoleic acid, 38.46; linolenic acid, 21.03; palmitic acid, 8.42; stearic acid, 1.88; soluble acids, calculated as acetic, though about equal amounts of formic and a small amount of caproic are also part of the soluble acids (it is not known whether these acids occur as glycerides or not), 15.67; unsaponifiable material, 2.96.

**Oiticica Oil.**—J. H. Holland sums up, in the Kew "Bulletin of Miscellaneous Information" (No. 8, 1932, 406), the present knowledge concerning the fixed oil obtained from the fruits of *Licania rigida* Benth., known locally in South America as oiticica. The oil is prepared on a commercial scale in Rio de Janeiro and in Fortaleza. Recorded analyses have yielded differing results. One of these analyses showed the constants to be:—S.g. at 15/15°C. = 0.9673; refractive index at 40°C., 1.507; acid value 5.6; saponification value 186.1; iodine value (Wijs, 3 hrs.) per cent. 144.8; unsaponifiable matter per cent. 0.9; and solidifying point of fatty acids 45.4°C. Making allowances for the recorded variations it is concluded that oiticica oil is characteristic in respect of smell, which is very persistent; density, which is higher than that of tung oil; refractive index, which is lower than that of tung oil; melting point range, which shows a great difference between incipient and complete fusion; heat polymerisation and gelation, rather slower than tung oil; high oxygen absorption, relative to linseed oil.

## HYGIENE

**Bacteria on Raw Fruit.**—J. T. Smeall has carried out an investigation ("British Medical Journal," 3750, 917) regarding the kinds of bacteria to be found on raw fruit, and the frequency of occurrence. While the tabulated results are, as a whole, reassuring, it seems not unreasonable to suppose that at least some of the minor gastro-intestinal disturbances that are common in the fruit-eating season may be due to the bacterial content of the fruit. If the skin of the fruit is to be eaten, it is recommended that in order to minimise the risk of infection the fruit should be washed in running water or some changes of water. From a hygienic point of view the best type of fruit is where the skin is inedible, in which case any contingent contamination is under the control of the consumer.

**Prevention of Illness by Cod-liver Oil Medication.**—A. D. Holmes and others ("Industrial and Engineering Chemistry," 24, 9, 1058) summarise records in regard to hours absent from work in respect of two groups of workers, one of which supplemented their usual home dietary by the daily addition of one tablespoonful of cod-liver oil. The average number of hours of absence per person for the cod-liver oil group of persons was 20.4 for the first year (1930) and 12.8 in the second year (1931), or a decrease of 40 per cent. as regards lost time. The time loss per person without cod-liver oil medication was 17.4 hours per person in the first year and 25.1 in the following year, indicating the value of vitamin-enriched dietary in preventing illness. There was a 140 per cent. gain in complete freedom from colds in the cod-liver oil group in 1931 against 1930.

**Milk-borne Diseases.**—S. R. Douglas ("British Medical Journal," July 30) divides milk-borne diseases into two classes: (1) those in which the milk becomes contaminated after withdrawal from the cow; (2) those the causative organism of which actually infects the cow and is excreted with the milk. Forty per cent. of the milch cows of England and Wales are stated to be tuberculous as estimated by the tuberculin test and post-mortem examination; probably this is an under-estimate, the true figure being considerably higher. The incidence of infection increases with the age of the cow; the disease is frequently fatal and causes serious economic losses. About 0.2 per cent. of cows have clinically recognisable tuberculosis of the udder; there is also a considerable number in which tuberculosis of the udder may escape clinical recognition. Such animals almost certainly secrete tubercle bacilli, either continuously or intermittently, in their milk. Undulant fever may be caused by the *Br. abortus* of Bang, which is the causative organism of infectious abortion in cows. It is of great economic importance, as it causes very severe losses to the farmer, although not usually a fatal disease. The cow after aborting may excrete large numbers of *Br. abortus* in the milk and may continue to do this for years. Other animals may be infected naturally—for instance, sheep, pigs, horses and occasionally dogs. It must be accepted that the majority of strains of *Br. abortus* of cattle have very little power of infecting man. It is otherwise with strains isolated from pigs, and probably also with strains from sheep. The incidence of contagious abortion of pigs in this country is unknown, but it is believed that cases occur. With strains of *Br. abortus* isolated from pigs, cattle may be infected, and it is possible that such strains, even after passage through a cow, may remain infective for man. Mastitis in cattle is a very common disease. Many cases are due to streptococci, large numbers of which may be excreted in the milk.

## MATERIA MEDICA

**Seeds of Abrus Precatorius.**—N. Ghatak and R. Kaul ("Journal of the Indian Chemical Society," ix, 8, 383) have made a systematic analysis of the seeds of *Abrus precatorius*, Linn. (Jequirity), with a view to studying

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the exact chemical nature of the poisonous constituents. Two products, one nitrogen-containing and another a glucoside (abrine and abralin) have been isolated; a non-drying yellow oil has also been obtained. Abrine, state the authors, dissolves in concentrated nitric acid with orange red colour which becomes yellow on dilution. In strong sulphuric acid it dissolves with yellow colour. When very slowly crystallised from water about 1 cm. long star-shaped needles are obtained. Abralin dissolves in concentrated nitric acid with red colour, which becomes orange-yellow on dilution. In strong sulphuric acid it dissolves with a yellow colour, which slowly darkens and finally becomes deep red. On dilution the colour is discharged and a yellow flocculent precipitate separates, which is the aglucone of the glucoside. Abralin has a *lævo* rotation of  $[a]^{D25} = -27.37$  in aqueous solution. Constants for the oil are also given.

**The Temperature for Drying Thyroid.**—H. A. Mitchell calls attention ("British Medical Journal," 2748, 864) to the new B.P. specification for thyroid. It is assumed in describing the assays of inorganic iodine that it is only this which is water-soluble. In practice this is only correct if the temperature of drying is sufficiently high. The B.P. fixes an upper limit of 60° C. for this drying, but makes no mention of a lower limit, leaving one to conclude that therefore the drying should be carried out at the lowest possible temperature in order that as little change as possible due to heat will be caused. Yet if thyroid gland be dried at a temperature of, say, 40° to 45° C., the organic iodine is not denatured, and consequently remains water-soluble. It appears, therefore, that thyroid dried at low, and what the author describes as optimum, temperature will not conform with the new B.P. requirement, but must be heated up to a considerably higher temperature than is actually necessary for drying. One may argue that denatured protein is more readily assimilated by the gastro-intestinal tract, and that therefore one would get more rapid absorption, but in the presence of a certain amount of empiricism is it advisable to heat a substance unnecessarily, with its resultant chemical change, the exact therapeutic action of which is even yet not clearly understood?

## MEDICINE

**Impetigo.**—"M.D." writes to "The British Medical Journal" (3745, 738) as follows:—"I have never found a case of true impetigo fail to clear up quickly on the following old-fashioned prescription:—Argent. nitrat. gr. xv., spt. æth. nit. ad. 3 i. Two or three applications are needed at daily intervals, all scabs having been removed before the first application. The silver solution deposits a brown stain, but this soon wears off."

**Therapeutic Uses of Carbon Dioxide.**—In a communication to "The British Medical Journal" (3751, 996), G. Willet suggests the following uses for carbon dioxide other than in whooping-cough:—(1) In combination with oxygen to ventilate the lungs, and to bring about an early crisis in cases of unresolved pneumonia. (2) In spasmodic asthma its effect is almost instantaneous, and it may be repeated two or three times daily. (3) In chronic rhinitis. (4) In treating warts, in the form of carbon dioxide snow. (5) In the treatment of hiccup. (6) After ether anaesthesia.

**Test for Renal Efficiency.**—F. H. Lashmet and L. H. Newburgh give details, with charts ("Journal of the American Medical Association," 99, 17, 1396), of a test devised by them for renal efficiency. Under definitely controlled conditions, normal kidneys are able to concentrate the urine to s.g. between 1.029 and 1.032, while diseased kidneys cannot. The lower the concentrating ability, the greater the renal damage. When determined under the conditions described, the s.g. of the urine detects lowered kidney function before this fact is discernible by either the phenolsulphonphthalein test or determination of the blood non-protein nitrogen.

**Sanocrysins in Pulmonary Tuberculosis.**—A review by H. E. Mansell ("Lancet," 5694, 837) of 153 patients treated with sanocrysins shows that the most dramatic effect, in the direction either of improvement or the reverse, is obtained in young patients with exudative disease, and that fibrotic patients, although more likely to be unaffected, do in a considerable number of cases show definite improvement. Promising results are obtained from its use in conjunction with artificial pneumothorax, phrenic avulsion and thoracoplasty. There is need for further controlled investigation, particularly of the effect of large doses on early cases showing a relatively slight degree of lung involvement.

**Problems of Diabetes.**—A. W. Hendry records a hospital case ("Lancet," 5695, 897) throwing further light on diabetes. In a diabetic with slight hypothyroidism, insulin became inactive and without effect; when thyroid was given insulin activity manifested itself. In this case, it is considered, insulin activity was conditioned by the thyroid, because other factors in the case were not altered. The patient required increasingly large doses of insulin to maintain the desired therapeutic effects. This tolerance was markedly lessened by the presentation of a small dose of thyroid. The findings lead to the suggestion that insulin is not the only hormone necessary for the normal metabolism of sugar and fats.—In the next issue (5696, 935) of the same journal, H. P. Hinshaw discusses the activation of insulin, and suggests that insulin-kinase is produced in the liver. This opens up many new possibilities in the pathology of diabetes. The question arises as to what extent disease of the liver and the presence or absence of this new factor plays a part in the production of diabetes mellitus.

**Treatment of Nervous Disorders Accompanying Anæmia.**—W. Sargent discusses ("Lancet," 5703 1322) the results obtained with large doses of Blaud's pill in nine cases of nervous disorder accompanying anæmia. No case has failed to show a striking degree of improvement, and over a period of six months no relapse has occurred unless iron has been temporarily discontinued. In three cases in which the iron was either discontinued or greatly reduced the patients reported that their symptoms were returning, to disappear again on restoring the large iron dosage. After an initial period of two to three months on Blaud's pill, 150 gr. a day, it has been found advisable to continue with at least 40 gr. a day if a relapse is to be avoided. Improvement may be expected in three weeks to a month from the commencement of treatment. No other cases are on record of patients receiving such large doses over so long a period, but they are little upset by these large amounts, and, indeed, improved in appetite and gained in weight to a remarkable extent. A further comment is added by F. S. Langmead, who points out that the *rationale* remains a subject for inquiry.

**Treatment of Addison's Disease.**—J. M. Rogoff contributes to the "Journal of the American Medical Association" (99, 16, 1309) a lengthy study of results obtained by the administration of adrenal cortical extract (representing interrenal, the hormone of the gland) in Addison's disease. He concludes:—(1) The comparison of cases treated with interrenal and those under other treatment demonstrated decided prolongation of life and amelioration of symptoms in the former. Permanent relief or cure of the syndrome, however, can rarely, if ever, be accomplished. (2) Addison's disease is the result of lack of function of the adrenal cortex (interrenal) and not of the medulla (epinephrine). Treatment with epinephrine, therefore, is based on a concept that is not supported by substantial physiological evidence.—S. L. Simpson discusses (in "The British Medical Journal," 3743, 625) the results obtained in the treatment of Addison's disease with cortical extract. He points out that at present the average daily maintenance dose is derived from no

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fewer than fifteen oxen, or from as much cortex as would be present in the adrenal glands of thirty normal men. A more concentrated product is essential for research purposes, and the author believes that many of the puzzling and indefinite clinical and biochemical results will assume a more enlightening aspect when adequate quantities of extract are used. At present research workers must be very tentative about their conclusions. He suggests, however, that:—(1) There are several internal secretions of the suprarenal cortex (as in the pituitary gland) which are unevenly represented in potency in the cortical extract at present available. (2) There is a relationship, at present ill defined, between the cortex and medulla, which parts of the suprarenal gland, although of different embryology and morphology, may have been woven so closely together not merely as a purposeless whim of nature. (3) Although the cortex and not the medulla is essential to life, the absence or diminution of adrenaline plays a part in the symptomatology of Addison's disease.

**The Application of Tannic Acid.**—G. Ward, in a letter to "Lancet" (15694, 868) advocates the application of tannic acid as a dusting powder rather than in solution. He suggests that the indications for tannic-acid therapy are (1) the presence of a raw surface on the epidermis which (2) is little or not at all septic, and (3) is likely to cause considerable trouble and pain if treated by any application requiring constant renewal. The cases treated include many injuries occasioned by motor accidents and many examples of the raw area left by avulsion of nails with or without destruction of the nail bed, burns, surgical wounds of which the edges are no longer in apposition, one or two small varicose ulcers, and other similar conditions. A colleague has had good results from packing the powder into septic sulci caused by ingrowing toe-nails. In general, sepsis is rather a contra-indication, but tannic acid is an excellent antiseptic and can deal with minor septic invasions. Tannic acid will not remove from motor wounds traces of dirt and oil. But it will cover these up and keep them sterile so that they become incorporated in the natural scar forming beneath the tannic-acid covering. The result is not good, especially on the face. Tannic acid will control oozing in most cases but not real haemorrhage unless pressure also be applied. When a covering is necessary he uses wool applied directly over the acid and bandaged in place. After two or three days he pulls or cuts away all the wool that will come away. No further dressing or bandage is applied.—In another issue of the same journal (5693, 774) J. H. Hunt and P. G. Scott give details of three methods of treating burns and scalds with tannic acid. They recommend for the first-aid treatment of either class of injury the use of dressings soaked in a 5-per-cent. solution (20 gr. to 1 oz. of warm water). The solution is applied with a camelhair brush instead of a spray. The crust that forms is reinforced with gauze, gauze and collodion, or collodion alone.

## OPTICS

**Reaction Time of the Normal Pupil.**—H. S. Gradle and W. Ackerman ("Journal of the American Medical Association," October 15) find that in normal young blue-eyed persons the pupil reacts in accordance with the following terms:—(a) On illuminating the eye there is a latent period of 0.1875 second; (b) this is followed by a primary contraction of the pupil lasting 0.4365 second at the rate of 5.48 mm. per second; (c) then there comes a secondary contraction of the pupil lasting 0.3125 second at the rate of 1.34 mm. per second; (d) when the illumination is removed the pupil starts to dilate at the rate of 0.95 mm. per second.

**Ultra-Violet Light in Ophthalmology.**—H. R. Hildreth ("American Journal of Ophthalmology," October 1932) discusses the nature and properties of ultra-violet light, giving particular attention to its effects on the tissues

of the eye, its possible modes of action in therapy, and its physical limitations. The requirements for local treatment of the eye are considered together with a description of commercial ultra-violet lamps. The author's apparatus provides a constant, intensive ultra-violet beam having the characteristics requisite for ocular therapy. A safe but adequate standard dosage for cornea and conjunctiva has been determined and practical methods are presented for measuring the intensity of radiation from ultra-violet lamps. The therapeutic application of ultra-violet light is illustrated briefly in three cases of corneal disease.

**Sun Glare.**—F. C. Livingston ("British Journal of Ophthalmology," October 1932), in a comprehensive study of the effects of sun glare in Iraq, states that though there may be no subjective signs in many individuals, yet the presence of abnormal weakness or fatigue can be fully demonstrated in varying degree. The 40 mm. mercury test shows that the pulse rate is greater in summer, but remains within normal limits. A condition of mental inertia is demonstrable in many instances through the use of the Bishop Harman test. Fatigue of accommodation and convergence is almost universal. Reduced light sense and threshold is exceedingly common. Changes in the visual fields take place in many instances and show considerable variations. Peripheral contraction for white and for colours occurs and scotomata can be demonstrated in a number of instances. Visible ophthalmoscopic changes do not occur through reflected desert sunlight. (In contradistinction to macular changes resulting from exposure to solar eclipse.) Colour of eyes is unimportant as a method of deducing glare susceptibility. The careful use of anti-glare spectacles offers a valuable means of ocular protection. Mild cases respond immediately under the protection of anti-glare glasses. For lid irritation a weak lotion such as the following used twice a day is helpful:

Zinc. sulph.,				
Zinc. chlorid.	...	...	aa.	gr. $\frac{1}{2}$
Liq. hamamelidis	...	...	...	xxx.
Double strength saline	...	ad	ad	3 <i>l</i> .

Dilute with equal parts of warm water and use twice a day.

## PHARMACOLOGY

**Hæmopoietic Substance in Gastric Juice.**—R. S. Morris and others give details of research carried out at Cincinnati ("British Medical Journal," 3753, 1050) on the hæmopoietic properties of hog's stomach in the treatment of pernicious anaemia. Gastric juice was concentrated by distillation *in vacuo*, with the result that a highly potent material was obtained. This material, which is injected intramuscularly, is considered by the authors to be a hormone. It has been designated "addisin."

**Carbon Tetrachloride Poisoning.**—L. W. McGuire reviews ("Journal of the American Medical Association," 99, 12, 988) the literature on poisoning by carbon tetrachloride, and gives notes of seven cases that have come under his observation. The seven patients were industrially employed. He concludes, *inter alia*, that the liver and the gastro-intestinal tract are the organs most commonly damaged; calcium deficiency and the use of alcohol render an individual much more susceptible; calcium therapy is particularly indicated in treatment.

**Iodobismitol as an Antisyphilitic.**—C. C. Johnson and his co-workers ("Journal of Pharmacology and Experimental Therapeutics," 45, 4, 469) present details of the curative and prophylactic dosage of iodobismitol in experimental rabbit syphilis. Iodobismitol is the name given to a solution of disodium pentaiodobismuthite ( $Na_2BiI_5 \cdot 4 H_2O$ ) in ethylene glycol. This is made by dissolving 6 grams of the sodium iodobismuthite in redistilled ethylene glycol, adding 12 grams of dry sodium iodide, and making up to 100 c.c. The glycol solution has the advantage that the iodo-

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bismuthite is less readily hydrolysed and precipitated by water and serum compared with the aqueous solution of this compound. The sodium iodobismuthite (which is described separately, loc. cit. 427) contains 21.9 per cent. of "electro-negative" bismuth in the form of a complex coloured anion of iodine and bismuth. The animal experiments show that the anti-syphilitic action of iodobismitol is due solely to the iodobismuthite. The minimum effective dose of iodobismitol, administered intramuscularly, was 38.8 mgm. (9.15 mgm. Bi) per kilogram of body weight of rabbit, this amount healing and clearing the lesions. It was more efficient in prophylactic than in curative experiments. Iodobismitol given intramuscularly is not so rapid as neocarsenamine by intravenous injection, but is as effective as any bismuth compound tried hitherto. The absence of undesirable symptoms with iodobismitol in the tests agrees with the tolerance exhibited by human subjects.

### PHOTOGRAPHY

**Treatment of Under-Exposures.**—K. Reitz ("British Journal of Photography," November 4, 1932) has successfully employed the procedure described by A. Knapp in "The British Journal Photographic Almanac, 1932," for dealing with under-exposed plates or films, but instead of amidol he used a developer prepared from the following formula:—

A. Pyrogallic acid	80 gr.	B. Sodium carbonate,
Metol	... 80 gr.	cryst. ... 6 oz.
Potash metabisulphite	... 200 gr.	Water, boiled ... 40 oz.
Water, boiled	... 40 oz.	

For use, take equal quantities of A and B.

This is a very quick-working developer in the usual way, the average time for development at 68° F. being 60 seconds. In developing the under-exposed negatives the procedure was as follows. Two dishes were used, one containing developer as per formula, and the other half filled with clean water; both liquids were raised to a temperature of 68° F. All lights were turned out in the dark-room, timing being done by means of a large luminous dial dark-room clock. A film was taken out of the slide and placed in the developer for 40 seconds, then transferred to the water dish for two minutes, back to the developer for 50 seconds, then another two minutes in the water, back to the developer for 80 seconds, and after that a final two minutes in the water. A rinse under the tap and into the acid hypo fixing bath. The negative was very nearly as perfect as if the correct exposure had been given. The negatives so developed have a yellow tinge which helps their printing quality. If objected to, it can easily be obviated by adding a couple of ounces of sodium sulphite to the B solution of the developer mentioned.

**Autochromes and Soft Water Supply.**—H. G. Butterfield ("British Journal of Photography," November 4, 1932) had difficulties in dealing with Autochromes in places where the water is abnormally soft. By the elimination of one factor after another, one was forced to consider, he states, whether the ultimate cause of the stripping was not in some constituent of the developer itself. The normal quinonomet reagent has ammonia as its alkaline activating reagent, and it seemed worth while substituting a developer without any alkali at all under these special conditions of very soft water. The solution of the difficulty was found in the use of a developer made as follows:—

Amidol	...	...	45 gr.
Sodium sulphite, cryst.	...	2 oz.	
Potassium bromide	...	9 gr.	
Water	...	...	20 oz.

This gave a perfect colour rendering with the normal Autochrome filter and the bichromate reversal bath, allowing approximately 25 per cent. increase in the time of first development.

**Bleacher for Sepia Toning.**—R. B. Willcock ("British Journal of Photography," December 2, 1932) describes a method of obtaining sepias by partially bleaching in copper chloride and hydrochloric acid, and afterwards redeveloping in a normal metol-hydroquinone developer. The formula for the bleaching solution is as follows:—

Cupric chloride	...	...	240 gr.
Hydrochloric acid	...	...	1 oz.
Water	...	...	20 oz.

The rich brown-black so produced is entirely free from double tones. Uniformity is possible in toning quantities of prints due to the slow action of the bleacher, which is apparently suspended after the original tone has changed to a golden yellow. At this stage only a brief rinse in water is required before re-developing the print in a normal M.Q. developer. As a bleach for complete sulphide toning it is stated to be far in advance of potassium ferricyanide and potassium bromide. The mixture of copper chloride and hydrochloric acid possesses good keeping qualities, and is not materially affected by the presence of hypo in small quantities. The formula given may be used at a strength of one part to four parts of water. In this condition it may be used successfully for the removal of stains from bromide prints, the procedure being as follows: Immerse the print in the bath until all traces of the stain have disappeared; then redevelop in fresh M.Q. or amidol developer.

### VETERINARY MEDICINE

**Effect of Cod-Liver Oil on Cows' Milk.**—W. E. Petersen ("Journal of Dairy Science," July 1932) has investigated the effect of feeding cod-liver oil to milking cows. He finds that in every case when five ounces of the oil is added daily to the ration there was a marked decline in the fat percentage of the milk with no apparent effect upon the amount of milk. The depressing effect of the cod-liver oil seems to be cumulative for a time.

**Anthelmintics in Licks and Drinks.**—I. C. Ross ("Australian Veterinary Journal," June, 1932) states that the daily administration of solutions or suspensions of potassium permanganate, carbon tetrachloride, tetrachlorethylene, Kerol, Caporit, or borax, in the drinking water of sheep had no demonstrable effect in mitigating the degree of infestation with *Hæmonchus contortus*. No evidence was obtained that the consumption of phosphatic licks containing sodium arsenite and copper sulphate, or copper sulphate alone, had any value in lessening infestation with *H. contortus* or *Oesophagostomum columbianum*. In an addendum to this paper H. Finnemore states that in giving carbon tetrachloride it has been usual to dilute it with liquid paraffin; it was found that the addition greatly increased the stability of the final emulsion. For a 50 per cent. preparation, the formula adopted after a few preliminary trials was as follows:—

Commercial soft soap	..	..	20 gm.
Cresol	..	..	6 c.c.
Carbon tetrachloride or tetra-chlorethylene	..	..	50 c.c.
Liquid paraffin	..	..	to 100 c.c.

Heat the soft soap and the cresol on the water bath until a soft homogeneous jelly is produced, the carbon tetrachloride is then added in portions with gentle heating until the jelly has dissolved; the liquid paraffin is then added and the product made up to volume. If the product is slightly turbid a few drops more of cresol will produce a clear liquid, which is syrupy in consistence. When this liquid is added to 500 times its volume of water, a milky emulsion is produced from which no carbon tetrachloride separates, even after standing for some days. Attempts were made to modify these proportions: as little as 10 per cent. of soft soap and 5 per cent. of cresol may be used, but the product does not emulsify with the same ease as the liquid made by the formula set out above.

# From Assistant to Proprietor

## Reminiscences by Frank English

**A**PPRENTICESHIP over, qualified—yes, qualified at an early age—but only experienced in so far as the possibilities of a small town afforded opportunities which, truth to say, though useful, were all too soon exhausted by a mind quickly sensitive to exterior impressions; in what phase of pharmacy should I venture upon life's journey? Inclination pointed towards London, but the offer of a situation in a North-Western county town decided me to postpone metropolitan experience for a time, and gain a further sense of business responsibility amidst a district whose natural beauty I was anxious to explore.

My new master, like my apprentice master, was, strange to say, a fisherman; the former indulging in the sport in a placid trout stream, the latter favouring more turbulent flowing waters in pursuit of salmon. One of my first essays was to cut demy into the accepted sizes. Did I know how? Oh, yes! I have cut up reams. Had I made pills—big batches of from 1 lb. to 2 lb.? I could manage a batch of pills from massing to cutting and finishing; but my assurance somewhat sank when the request came to silver-coat them. For a moment there was hesitation, but I re-collected a note in my indexed note-book extracted from the *C. & D.* relative to silver-coating, and the product turned out more than satisfactory. Good fortune may have favoured me, and for the future the needful galenical and other pharmacy was largely left to me to carry out.

### Greek on the Counter

Chance associations have often unlooked-for results, and such a circumstance happened within a few days after commencing in my new situation. I had occasion to go into the shop of the neighbouring hatter for some trivial article of attire; whilst being served I noticed a Greek text-book on the counter, and I ventured to glance at it. Did I know Greek? was the hatter's quiet query. Yes, I did know just a little, and at the moment had a copy of St. John's Gospel in my pocket. "Would you like to see my library of Greek writers?" was the unimagined request. "By all means," came a prompt reply; and at the end of the counter I saw an office enclosure, shelved, and bearing upon those shelves the works of every Greek writer of repute, in those editions which the scholar loves to have. "Why these, sir?" was my question. "Well, you see, when my windows are dressed, I have not much to do, for customers do not come in very rapidly; and it is amongst reading of this kind that I spend the spare hours." Wonder has often asked me how a university professor of Greek would feel if brought up against a natural culture such as this. The interests of my new friend did not end with Hellenic studies: he was a skilled musician, and in the winter months taught choral singing. "Wasn't I the new assistant who had come to Mr. —, the druggist? Then, if I liked, he would introduce me to some of his friends who were science men, who, he knew, would be pleased to help me."

These friends were the outcome of the mechanics' institute and mutual improvement society movements, then in the prime of their influence. Each of them made a study of a special subject, the result of which studies became the property of anyone. A young recruit was welcome; even his brief life sojourn might bring some fresh food into the common larder of the old ones. My interest was then entirely botanical, with a special leaning towards the study of microscopic fungi. The fields which my new-found friends opened to me were veritable Tom Tiddler's grounds in respect to minute fungi—indeed, I question whether the area had been investigated before.

Literature, too, had its votaries during the day's tramp; Milton and Shakespeare were by far the

favourites, with Scott as the preferred novelist. The criticisms and ideas, being purely native and natural, had all the force of unpolished originality. My days amidst these genial companions came to an end, but not the memory of them. One Sabbath morn in the late autumn I wended my way southwards to fulfil the longing to be in London, and learn something of and from it—the experience of these years may not vary much from the experience of others.

### Good-Class Dispensing

In this situation my lot was that of the junior assistant, upon whom fell the duty of compounding all those troublesome mixtures and awkward compoundings which a really capable managing assistant stated was a part of my work. Much did I profit by being thrown many times upon my own mental resources, and so much of dispensing experience as I had acquired. A beautiful example of the cartographer's art, about 1825, a map of London, was amongst my few books, and with this possession the spare hours were spent first in tracing locations, and then visiting them on foot; thus I came to know London. The spare Sabbaths were spent in long walks into the country. By this means I acquired in an unconscious way much of the geology of the Thames Valley district, and a more than passing acquaintance with the flora; both these features were particularly interesting as being in contrast to previous experiences of a like kind. I shall never forget the chalk of the neighbourhood of Caterham—and the orchids—now, I fear, no more, owing to building encroachments.

Would I like a change? queried my superior; he knew of a vacancy which he felt would suit me and be of material advantage everywhere; indeed, he would consider it a personal favour if I would accept it. I did accept, and found that the new employer was a real book-lover. He wrote English with a facility and fitness of phrase and wording which was and still is my envy. Here I became a sort of senior assistant, perhaps something more than an assistant, for my service grew into friendship. I was enabled to spend occasional hours at the Library of the Pharmaceutical Society in Bloomsbury Square, for books of some nature were always required by either master or man. Then came a contact with the late Mr. Holmes, the curator, whose memory all will revere; here I may pay a debt of gratitude to him for his ever-ready kindness and help at all times. May he "sleep well"!

At that time the City had almost lost its residential population. The shop hours had in consequence become shorter; Sunday duty was reduced to a minimum, and ultimately ceased for lack of customers; these changes afforded opportunities and time for my long-cherished idea of studying the history of the City of London. My Mecca was the great Church of Saint Bartholomew, Smithfield, and the foundation date of this great fane was the one upon which I decided as the one from which my "notes" were to date. This ecclesiastical system is still the one I continue to use, after almost half a century of experience; and for practical and popular purposes I consider it the best. No editor of a technical journal would find room for whatever matter I cared to submit relative to this subject of London, and having given the apology, I may pass from general to personal affairs. The freedom of the hours afforded lots of reasonable opportunity for recreation and culture. Sundays were still largely spent in the countryside; if the weather was unfavourable a regular practice was made of attending worship at the City churches—still fortunately preserved to us. I must have heard addresses by all the great preachers, speakers and reformers. One above all others, however, remains as an impression, an afternoon address on a

scientific subject, the name of which I forgot, by Prince Kropotkin, the exiled Russian, delivered extempore—without a note—in the most cultured English, devoid entirely of any foreign accent; it was a masterpiece of scholarly culture. The days flew only too rapidly towards an ultimate end. I had always aimed at going right through with pharmacy; a few weeks of well-applied study, and I passed the "Major."

### The Choice

Should I open a new business, or take over an existing pharmacy? Youthful individualism and a confidence in my powers decided upon the former course. And where? In the metropolis, in a large or small town, or the country? The decision came for a medium-sized country town, where hopes held out the probability of a personality being able to impress itself and a capacity for work to reap the reward. Despite the year or two of waiting I still feel this was the best course for me; and though there may not have been the immediate return for the capital outlay, in the end there was a mental satisfaction of having carved out a living on my own account. I took a small shop, at the confluence of several streets, where workers innumerable were always passing to and from the neighbouring works, and my social ideas being somewhat democratic, the humble sixpence of the industrial class appealed to me more than the credit pound of the well-to-do; moreover, the wants of the industrials are heavy, and for cash.

At first customers were few, and returns were small; but with growing confidence in the new chemist, week by week the bill showed an increase, and, despite the low prices then in vogue, the profits showed a reasonable percentage on the sum invested. I was establishing myself amid a populace which appreciated service. Soon the increase went beyond the capacity of one pair of hands and the errand-boy—though not enough to employ skilled assistance—and for months I waited for some bright youth who might be tempted to enter the mysteries of becoming a chemist and druggist. Ultimately such a one approached me, and my first apprentice, now in prosperous circumstances, came along—his old master still whispers a benediction over his life. Packed goods and wholesale-house galenicals were at that date not much in vogue. I, though never doubting the quality of my wholesalers' packing, felt that my customers must have the personal satisfaction that I could and did make every article which I vended so far as such was possible, and my equipment in utensils, many home-made, was oftentimes the object of inspection by customers who were craftsmen. A woodturner (a real artist at his craft) gave me as a recognition a broad-based wooden pestle with which to make emulsions, instead of using the ordinary form. What a boon this gift was!

Truth to say, my apprentice found me more work, but only for a time. I was anxious to do my best for him, for his future in a great measure depended upon me. With a sense of this obligation, I plotted out a practical course of shop work, to be accompanied with the teaching of those sciences which have direct reference to pharmacy. These I taught myself, augmenting the tuition by insisting upon attendance at the classes at the local Mechanics' Institute—and the reward came. I may briefly state the methods and means which were adopted in my initial experiences of training apprentices. These I still maintain after the lapse of years. The initial consideration is the respect and confidence of your pupil; the second is to impress upon a young and receptive mind the necessity of always keeping in view the obtaining of the statutory qualification, and a little kindly guidance will check any faltering on the way. The only text-book was an interleaved "B.P.;" the working benches, the dispensing counter and the selling counters; the commercial experience gained by helping in any transaction, whether buying or selling, and the recording of those transactions when necessary; that is, simple book-keeping. Launching into pharmacy is not a simple matter. Another requisite was a small portfolio, to be used as a notebook of handy size, arranged alphabetically.

The first lesson was a brief history of the British Pharmacopœia, taken from notes I have made. Then came

careful, though perhaps long, talks upon our system of weights and measures, and I soon found how difficult to the beginner is our seemingly strange system. The metric system, in a lesser degree than our system of weights, is not without its difficulties to a young pupil: again the practical system of demonstration was adopted. The third initiatory lesson was the dispensing scales—as an instrument of precision, always to be used and treated as such. The dispensing scales soon became a favourite instrument for taking specific gravities and for estimation in elementary gravimetric analysis. The way was thus cleared for commencing work upon the Pharmacopœia.

### Lessons in the Shop

Acacia—initially, where does it come from as an article of commerce, and where is its geographical source (for these may be different areas)? At this early stage the systematic making of notes must begin—in a note-book which, arranged alphabetically, can be expanded on the lines of the many types now easily obtained: add to this a cheap interleaved small atlas of the world. Secure from your kindly disposed wholesale house a sample of gum acacia as imported. The gum should now be garbled by the student.

I turn to iron as my example of mineral *materia medica*: varying the method only so far as the consideration becomes a chemical one in distinction from a botanical one—the general idea must remain the same. For dispensing, what better guide can be had than "The Art of Dispensing," published by THE CHEMIST AND DRUGGIST? This volume, augmented by careful noting of the queries and difficulties which appear in the *C. & D.*, and the making in small quantities of such preparations as pills, suppositories, and so forth, furnish material for any principal who desires to give his pupil a thorough tuition in the craft of dispensing. Prescription-reading does offer a difficult problem in some instances; even here the difficulty is not insuperable in these days of N.H.I. dispensing, and the submission for solution of difficult prescription-writing to the pharmacists assembled at their usual meetings. Again the *C. & D.*, with its not infrequent instances of bad prescription-writing, is a material aid.

Botany was my favourite science, and I confess to pouring out my soul at all times to any sympathetic hearer. The nomenclature troubled my pupil; he did not know any Greek, and the preponderance of words derived from this language used in descriptive botany was a great difficulty for a time. An elementary Greek grammar and vocabulary afforded the necessary literary assistance. Botany is too much regarded as a "soft" subject, one which can be "got up" from books. There can be no greater fallacy; it is essentially a science of life and the open air, and can only be adequately studied and learned amidst Nature's surroundings; only in a biological sense does it become a laboratory science. To intensify interest, my botany teaching was brought into direct contact with the pharmacy. Pharmacognosy was studied upon the crude drugs, examined in section with a large reading glass; illustrated drawings were made of the seen tissue and general structure; then the drug was powdered, again examined by glass and microscope, then sifted through coarse muslin to separate the structures for further examination, after treatment by water, spirit, and other reagents. About 50 grains was always incinerated for the estimation of ash. Side by side with these studies came pharmacy and poison law, or forensic pharmacy, to use the modern term. I had, and have, not any fanciful method of teaching the application of those legal enactments which control the distribution of scheduled poisons. It can be well and effectually done beside the sale counter and the desk.

For many peaceful years I pursued my vocation amidst kindly business neighbours and customers of every class; unfortunately the strain of responsibility, with the then long hours of retail business, made inroads upon a health none too robust. I was able to dispose of my pharmacy at a reasonable agreed figure to a fellow pharmacist.

# Chlorine: A Phase in its History

By Leonard Dobbin, Ph.D.

## III—A Controversy

**S**O far, the discussion of chlorine has been intended to present the views commonly held as to its nature, up to the period of the statement by Davy that he considered oxymuriatic acid to be an elementary substance and muriatic acid a compound of it with hydrogen only. It should now be possible to follow some of the more important points in the controversy regarding chlorine which took place in 1811-13 between Dr. John Murray, an Edinburgh lecturer on natural philosophy, chemistry, *materia medica* and pharmacy, and Dr. John Davy, Sir Humphry Davy's younger brother. The discussion was carried on in the form of letters communicated to volumes of "Nicholson's Journal," published during the period mentioned, and was opened by Dr. Murray.

In his first letter Murray states that "the common phenomena with regard to the production of oxymuriatic acid, and its apparent analysis admit of explanation equally on the established theory and on that advanced by Mr. [Humphry] Davy." He then proceeds to state and comment successively upon these phenomena as summarised under the following eight heads:—

### EIGHT POINTS FOR DISCUSSION

(1) When oxymuriatic acid gas and hydrogen are mixed in nearly equal volumes they act on each other and are entirely converted into muriatic acid gas.

Davy: Regards this experiment as synthetic, the two gases forming muriatic acid by their combination.

Murray: The oxygen of the oxymuriatic acid "may be supposed to combine with the hydrogen and form water, while the muriatic acid remains in the elastic state." Murray admits that Davy has remarked that when the gases have been rendered as dry as possible there is no sensible deposition of water; but he asserts that no difficulty attends the supposition that this may arise from the portion of water which is formed being retained in combination with the acid gas.

(2) Oxymuriatic acid gas decomposes sulphuretted hydrogen, sulphur is deposited, muriatic acid gas is produced, and when the gases have been previously dried, Davy finds that the diminution of volume does not amount to one-fortieth of the whole.

Davy: The decomposition must be supposed to be owing to the hydrogen combining with the oxymuriatic acid and forming muriatic acid.

Murray: The oxygen of the oxymuriatic acid combines with the hydrogen of the sulphuretted hydrogen, "forming water, which the muriatic acid holds combined with it."

(3) Ammonia is decomposed by oxymuriatic acid, and, according to Davy (but contrary to what has been asserted), there is no sensible production of water: dry muriate of ammonia is formed and nitrogen gas remains.

Murray: "The experiment . . . affords no evidence of the existence of oxygen in oxymuriatic acid, but neither is it inconsistent with that hypothesis; for the water that, in conformity to it, must be supposed to be formed, may exist in combination with either or both of the principles of the compound salt."

(4) Davy points out that Gay-Lussac and Thenard have proved, "by a copious collection of instances, that, in the usual cases where oxygen is procured from oxymuriatic acid water is always present and muriatic acid is formed"; and he adds that as oxymuriatic acid is converted into muriatic acid gas by combining with hydrogen, it is scarcely possible to avoid the conclusion that the oxygen is derived from the decomposition of water.

The "copious collection of instances" included sulphides, sulphites, sulphur dioxide, nitrous oxide, carbon monoxide, and nitric oxide. While all of these are

attacked by oxymuriatic acid in the presence of water with formation of muriatic acid and oxygen or an oxygen compound, there is no action if they are perfectly dry.

Murray's comment is that "such facts admit equally of explanation on the supposition that the oxygen is derived from the decomposition of the oxymuriatic acid, but that water is necessary to aid this decomposition by the affinity it exerts to the muriatic acid"; that is to say, muriatic acid requires water for its existence in the state of gas, and if water be not available the actions do not take place. He adds that the facts "are not therefore of themselves more favourable to the one hypothesis than to the other."

(5) When muriatic acid is acted upon by metals the acid disappears and hydrogen gas is produced.

Davy: Supposes that the muriatic acid is decomposed; its oxymuriatic acid combines with the metal and its hydrogen is evolved. Hence, he remarks, the compounds formed are the same "as those produced by the direct action of oxymuriatic acid on the same metals."

Murray: States that "the phenomena are equally explained by supposing the hydrogen to be derived from the portion of water combined with the acid in its gaseous state, the oxygen of this water combining with the metal, and the oxide thus formed uniting with the real acid." Murray admits that this production of hydrogen takes place even when the muriatic acid gas has been previously brought to its driest state by exposure to substances having a strong attraction for water; but he maintains that the same explanation still holds, since it cannot be affirmed that the *whole* of the water has been withdrawn. "As the water is removed from the acid gas, the affinity by which the remaining quantity is retained must progressively increase in strength, until it equal or exceed that of the substance attracting it; when, of course, its abstraction must cease. The phenomena, then, affords no decisive proof of Mr. Davy's hypothesis, for before the explanation given of them in conformity to that hypothesis can be received as exclusively just, it must be established by prior and independent evidence, either that muriatic acid does not contain combined water, or that it is a compound of oxymuriatic acid and hydrogen."

(6) Murray: States the case and gives his explanation. If the compounds formed by the action of oxymuriatic acid on metals or inflammables [sulphur; phosphorus] contain oxygen, as they must be supposed to do on the common hypothesis of the constitution of that acid, indications of it may be discovered in the products of their decomposition, and in this way evidence may be obtained of the presence of oxygen in the acid. With a view to determining this, Davy made several experiments. From the compounds obtained by the action of oxymuriatic acid on tin and on phosphorus, he tried, by the addition of ammonia to obtain oxide of tin and phosphoric acid respectively. In neither case was the experiment successful, the ammonia remaining in the combination and forming products possessing very singular properties—in particular, being very difficult of decomposition. "Still it may be remarked these experiments do not preclude the supposition that oxygen may have existed in these combinations; for, as the compounds were not decomposed, it cannot be affirmed precisely what is their composition. They afford, it is true, no proof that oxygen had been communicated from the oxymuriatic acid; but neither do they give any proof that this had not been the case. They may be compounds of the oxygenated metal or inflammable with muriatic acid and ammonia; and the difficulty of decomposing them and abstracting the acid so as to discover this oxygenated base, may, in common with all the preceding facts, be ascribed to the peculiar relation of this acid to water, the absence of that portion of it necessary to the constitution of the

acid gas preventing its disengagement from the base, precisely in the same manner that the same acid cannot be expelled from the dry muriate of potash or soda by a concrete acid" [boric anhydride,  $B_2O_3$ ; phosphoric anhydride,  $P_2O_5$ ] "unless water be supplied."

(7) Murray : Again states the case. One fact which Davy has established "appears more conclusive against" the view that oxymuriatic acid is a compound of muriatic acid and oxygen, namely, that charcoal heated to whiteness in oxymuriatic acid produces no change in it. "Now, if oxymuriatic acid be a compound of oxygen with muriatic acid; and especially if, according to the common opinion, this oxygen is retained in combination with the acid by an affinity comparatively weak; charcoal might be supposed capable of abstracting it at least with as much facility as hydrogen, which there is no reason to believe has a stronger attraction to oxygen. On the common hypothesis there appears no cause why it should not do so; and the fact seems favourable to the theory that hydrogen causes the disappearance of oxymuriatic acid, not by abstracting oxygen from it but by combining with it, and converting it into muriatic acid." Davy has stated that it was this experiment which led him to doubt the existence of oxygen in oxymuriatic acid.

Murray points out, however, that the anomaly here is just as great on the new view as on the old. For, according to the new view oxymuriatic acid is "a principle belonging to the same class as oxygen, which, like it, exerts powerful attraction to inflammable substances and which is not inferior in energy of action. Why, therefore, should it not, like oxygen, combine with charcoal?"

(8) Dry muriate of potash "heated with a concrete acid, as the phosphoric or boracic, is not decomposed, nor is any muriatic acid gas disengaged; but if a little water be added, very abundant vapours of the acid immediately arise."

Murray : "The obvious conclusion from this is that water is essential to the constitution of the muriatic acid gas."

Davy : In conformity with the new view, "dry muriate of potash is not a compound of muriatic acid and potash, but of oxymuriatic acid and potassium; and . . . the water added is decomposed, its hydrogen combining with the oxymuriatic acid and converting it into muriatic acid and its oxygen changing the potassium into potash."

The next step forward which demands notice was made by John Davy, who, in imitating, so far, an experiment made by Murray, in which the latter exposed to light mixtures of hydrogen, carbonic oxide and oxymuriatic acid, proceeded on somewhat similar lines, but used mixtures of carbonic oxide and oxymuriatic acid only, and in doing so discovered phosgene. He found that water by acting upon this substance gave carbonic acid and muriatic acid, and so afforded an explanation of the carbonic acid in Murray's experiments which had been supposed by him to be formed by the oxygen of the oxymuriatic acid.

#### FURTHER EXPERIMENTS OF MURRAY

Murray's next experiments were a departure from those purporting to prove the presence of oxygen in oxymuriatic acid, and were designed to prove that muriatic acid contained water. To this end he devised what he considered to be a crucial experiment which, according as its result might indicate, should lend support to Davy's view of oxymuriatic acid and muriatic acid or prove the accuracy of the older view. Dry muriatic acid gas and dry ammoniacal gas, the latter being a substance which it was admitted did not contain oxygen, were to be mixed over mercury. If muriate of ammonia alone was produced and no water, this favours Davy's view; if water was produced also, this established the older view.

In the actual experiment, thirty cubic inches of muriatic acid gas were mixed in a jar with thirty-two cubic inches of ammoniacal gas which had been carefully dried. Murray states that the white spongy salt formed "gave indications of humidity," inasmuch as "it could not be entirely detached from the glass, but adhered slightly to it; in removing it by a knife, it spread a little over the surface, as any substance very slightly moist and clammy would do; and, when pressed together by a knife, its parts adhered slightly." The salt was

immediately put into a small retort with a long neck and when heated there, "in a short time a thin film of moisture condensed in the neck of the retort." Further indications of moisture were obtained when the salt, removed from the retort, was afterwards strongly heated in admixture with a charcoal powder, which latter had itself been previously exposed "to a heat gradually raised to a very high degree of intensity," and, in addition, Murray reported the production of an "elastic fluid" which caused a milkiness in lime water, with diminution of volume while "the residual gas, after slight agitation with water, burned with the faint yellow flame of hydrogen, and, after its combustion, rendered lime water slightly milky." From the results of these operations, Murray concluded that the production of water was demonstrated and that since it could not come from the ammoniacal gas it must be derived from the muriatic acid gas.

Dr. Davy objected to Murray's conclusion from this experiment, asserting that the salt which had been obtained took up moisture from the atmosphere while being transferred from the jar to the retort, that it was this hygroscopic moisture which appeared in the neck of the retort on heating, and that, in a repetition of the experiment under such conditions that there was no such transference and no exposure to the atmosphere, there was no subsequent driving out of moisture when the salt was heated, whereas moisture was observed when transference had taken place. In response, Murray examined the behaviour of this salt on exposure and, deciding that it did not, in a short time, attract moisture from the atmosphere in appreciable quantity; he defended his conclusion from his previous experiment.

#### CONCLUSIONS OF DAVY

Dr. Davy then reported a repetition of the experiment with muriatic acid gas and ammoniacal gas which was made in the presence of himself, of Sir H. Davy, Professor Hope and others. Ninety cubic inches of each gas was admitted in successive portions into a retort of twenty-six cubic inches' capacity. In the retort "a dew just perceptible was observed lining the cold neck. The quantity of water was so extremely small that the globular particles comprising the dew could scarcely be perceived by the naked eye, unassisted by a magnifying glass."

"This result appeared to me very decisive. The quantity of gases employed was large, the water, which ninety cubic inches of muriatic acid gas should afford is, according to hypothesis, equal to no less than eight grains. How great is the difference between this quantity and a dew barely perceptible! which may reasonably be referred to a minute quantity of vapour in the gases, or to a little moisture derived from the mercury, a small quantity of which entered the retort with the gases."

"Dr. Hope wished to ascertain how much water would produce such a dew as was observed. For this purpose he heated in a retort, of a similar size to that used in the experiment, a single drop of water, which it may be said weighs about 1 grain. The appearance of condensed water in this instance in the neck of the retort, was much greater than in the preceding; he thought it was three or four times as great."

"May we not conclude from these results, on Mr. Murray's own ground of reasoning, that water is not a constituent part of muriatic acid gas, and that this substance is a compound merely of chlorine and hydrogen? And may we not reasonably consider that very minute portion of water, which did appear, as uncombined moisture derived from various sources? It is easy to account for the presence of about one-third of a grain of water on the one theory; it is impossible to account for the absence of 8 grs. on the other."

The examination of iodine and the iodides, of the fluorides, and of hydrocyanic acid and the cyanides, soon led to the recognition of the existence of other acids and of series of salts, which did not contain oxygen in their composition and afforded much support to the opinion that oxygen was absent from oxymuriatic acid, muriatic acid and the muriates. It does not appear that Dr. Murray ever admitted acceptance of the new view.

## New Books

*Manual of Chemistry for Dispensers.* 7½ in. by 4½ in. Pp. 205, with two charts and numerous illustrations. 3s. 6d. H.M. Stationery Office. [The contents "comprise subjects C and D of Part A, of the course of instruction for the qualification of dispenser in the Royal Army Medical Corps." The severe compression necessitated by treatment of the subject (including, as it does, physics and electricity) in so small a number of pages renders the supervision of a teacher desirable. Such expressions as "the presence of ammonia in the empty test tube" need elucidation.]

Bolling, C. L.—*Retail Management.* 8½ in. by 5¼ in. Pp. 466. 15s. Pitman & Sons, Ltd., Parker Street, London, W.C.2. [Aspects of business often treated in separate volumes are assembled in this manual. Although the author, in his preface, claims that he has written largely for "the progressive retailer with a business of moderate size," his reference to "commonplace chemists' shops" tends to confirm our impression that the business systems advocated by him are over-elaborate for the average pharmacy. The remarks on staff discounts (p. 143) are sound.]

Liverseege, J. F.—*Adulteration and Analysis of Food and Drugs.* 9½ in. by 5¾ in. Pp. 599. 36s. J. & A. Churchill, 40 Gloucester Place, London, W.1. [A comprehensive treatise on the work of a public analyst. Mr. Liverseege had forty-three years' experience in the Birmingham Municipal Laboratory, and the records of the Laboratory, covering 100,000 samples of food and drugs, have been placed at his disposal. Written primarily for analysts, the book should also appeal to the wider circle of chemists interested in the problems of analysis. The Rt. Hon. Neville Chamberlain contributes an appreciative foreword.]

Watt, J. M., and Breyer-Brandwijk, Maria G.—*The Medicinal and Poisonous Plants of South Africa.* 9½ in. by 7 in. Pp. 314, with plates. 25s. E. & S. Livingstone, 16-17 Teviot Place, Edinburgh. [This volume contains a valuable compilation of the medicinal actions, chemical compositions, pharmacological effects and toxicology of the flora of South Africa. Over 2,500 plant specimens referred to were identified by the staff of the Division of Plant Industry at Pretoria. Several coloured illustrations adorn the well-printed volume. Comprehensive indexes give the botanical names of the plants, the common names in English and Afrikaans, native names and names of the active principles.]

Dennett, H.—*Direct Mail Advertising for the Retail Trader.* 8½ in. by 5¼ in. Pp. 210. 7s. 6d. Pitman & Sons, Ltd., Parker Street, London, W.C.2. [Books on merchandising have become so numerous that the development of a canon of received opinion may be said to be almost, if not entirely, complete. The book before us is for all practical purposes orthodox, even though it suggests in one chapter (p. 52) the triple alliance of a grocer, a draper and a chemist for the purpose of producing a "combined catalogue." The expression "druggist" for "chemist" (p. 193) strikes us as odd in a book primarily addressed to readers in this country.]

Hale-White, Sir W.—*Materia Medica, Pharmacy, Pharmacology and Therapeutics.* 21st edition. 7½ in. by 4½ in. Pp. 547. 10s. 6d. J. & A. Churchill, 40 Gloucester Place, London, W.1. [The issue of the twenty-first edition of this standard text-book has been marked by the adoption of a new type and a new size of page, resulting in increased legibility and convenience. The publication of the new British Pharmacopoeia has brought about several changes in the data relating to titles and doses of official preparations. First published forty years ago, the book fully maintains its reputation as a handy work of reference. The present revision has been carried out by Dr. A. H. Douthwaite.]

Holleman, A. F.—*A Text-Book of Organic Chemistry.* 9½ in. by 6 in. Pp. xx + 594. 17s. 6d. Chapman & Hall, Ltd., 11 Henrietta Street, Covent Garden, London, W.C.2. [The publication of this issue of Professor Holleman's book raises the total number of editions published in nine languages to fifty-two. This is the seventh English edition, and the text has been carefully revised, one of the chief features being the amount of space allotted to the applications in organic chemistry of physico-chemical methods, owing to the steadily increasing importance of data as to physical properties in organic chemical research. On p. 271, under the heading "vitamins," the sentence "... effect must be due to the presence of milk ..." should read "... effect must be due to the presence in milk of ..." A very full subject index is provided.]

Cooper, J. W., and Denston, T. C.—*A Textbook of Pharmacognosy.* 8½ in. by 5¼ in. Pp. 298. 10s. 6d. Pitman & Sons, Ltd., Parker Street, London, W.C.2. [Designed as laboratory manual for students preparing for the Chemist and Druggist Qualifying examination. Description is restricted to macroscopic characters for the most part, the exceptions being cases in which a microscope is requisite for confirming diagnostic features. After a first chapter on the reactions of plant constituents, the authors treat their subject under the headings, "Leaves," "Flowers" and so forth. A second volume is contemplated. The assistance of Mr. M. Riley in the preparation of the drawings is acknowledged.]

Mückenberger's Directory of the Chemical Industries of the World (Germany excepted). Seventh edition. 9½ in. by 6½ in. Pp. 1085. Marks 60. Verlag von Urban & Schwarzenberg, Berlin and Vienna. [The first part of this well known directory is divided into two sections. The first contains the names and addresses of chemical manufacturers arranged according to continents and countries; while the second section, in which German firms are also included, gives the names and addresses of agents, wholesalers, importers and exporters dealing in chemical and allied products arranged according to towns. The second part is also divided into two sections:—A classified list of chemicals, etc., with the names of their manufacturers (Germany excepted), and a list of raw materials and various products used in chemical manufacturing processes with the sources of supply (including German firms). The names of chemicals, etc., are given in German, English and French, and the inclusion of a tri-lingual index facilitates the use of the directory.]

Winter, F.—*Handbuch der gesamten Parfümerie und Kosmetik.* Second edition. 9¾ in. by 6½ in. Pp. 1008. Marks 84. Verlag von Julius Springer, Vienna.—[In the compilation of this compendium Dr. Winter set himself the task of covering the whole field of perfumery in its modern applications, with a view to providing the manufacturer and the perfumer with practical information, including scientific and technical data. The subject-matter is introduced by an interesting historical account of the development of perfumery, with numerous quotations from classical and other sources. The work itself is divided into four parts. In the first part the various products which provide the basis for perfumery are described, with notes on their origin, characters, constituents and properties. The actual manufacture, with details of the different methods employed, together with copious formulas, of perfumes, cosmetics and toilet accessories, is dealt with in the second part, while the third part is devoted to the manufacture of toilet soaps. The fourth part of the work deals with the therapeutic aspect of the cosmetician's art, and such subjects as the pharmacological action of the various bodies used in toilet preparations is discussed, together with notes on the manufacture of preparations intended to serve special purposes, some of which are on the border-line between "reparative beauty treatment" and medicine. Included in the text are 138 illustrations of plants and apparatus.]

# Trade Report

Where possible scales of prices of chemicals are given for bulk down to small quantities. Prices recorded for crude drugs, essential and fixed oils and coal tar products are for fair sized wholesale quantities. Qualities of chemicals, drugs, essential and fixed oils, etc., vary, and selected brands or grades would be at higher values

28 Essex Street, W.C.2, December 29

THE slowing down in the volume of business transacted prior to the holidays is likely to continue up to the close of the year. So far this week the markets have been dull since the reopening and business of importance is lacking. The general tone continues steady and, with but small movement in sterling exchange rates recorded, spot values of imported products affected by this contingency are about unchanged. There is no change in pharmaceutical chemicals to report, but a revision of the scales of sales prices of hydroquinone and phenolphthalein are expected at an early date. Phenacetin seems likely to break down if agreement on sales prices is not reached before the new year. The crude drugs markets are mostly neglected, with no material improvement in the demand looked for until the new year. The firm tone of a number of products, due to low stocks, is well maintained, such articles as buchu, cascara sagrada, honey and senna pods being very steady. The demand for essential oils has slackened temporarily with stock-taking at hand, but the tone in most directions is quite steady. Good inquiry is being received for bay, of which stocks are limited, and values tend to advance. Japanese peppermint has reopened quietly but steady. Petitgrain, vetivert and bois de rose are firm. Bergamot is irregular and weak. Fixed oils are generally unchanged, with only small business moving. In coal-tar products, carbolic acid crystals are very firm, and pitch is scarce at high rates.

## Pharmaceutical Chemicals, etc.

THERE is little change to report in this market. Business has been quiet after the holidays. The recent advances in values, some due to fluctuations in sterling rates of exchange and others to dearer raw materials, are all maintained. It is anticipated that the new scale of prices yet to be issued for HYDROQUINONE will be on a rather higher level than former values. The home makers' prices of RESORCIN are at the same figures as those in force for imported material. ASPIRIN, SALICYLIC ACID (B.P.) and SODIUM SALICYLATE are all very steady at the recent advance. PHENACETIN seems to be very unsettled, and unless agreement on sales prices is reached before the New Year a rather fierce fight for the business seems inevitable, and uneconomic prices are likely to prevail for a time. PHENAZONE is fairly steady with not so much cheap spot material offering. QUININE SULPHATE and other salts are all steady, and will, no doubt, continue to move with exchange rates. The recently introduced agreed prices for SANTONIN are maintained, and there appears to be very little outside material on the market. The spot prices for such products as BARBITONE, SULPHONAL, etc., which have to be imported, are all about level on the week, with very little movement in sterling exchange values. In most of these products there are usually some cheap sellers on spot who are willing to ignore the higher cost of replacing stocks, in order to make sales. Home makers' scale of prices for PHENOLPHTHALEIN are nominal at the moment, and in view of the very cheap prices formerly in operation some advance is anticipated when the new scale is issued in the New Year. Despite the import duties now inflicted on imported materials, the home makers of CITRIC ACID (B.P. CRYSTALS) have had to meet keen competition. Their position in regard to CREAM OF TARTAR and TARTARIO ACID (B.P. CRYSTALS) is rather better. Makers' scales of sales prices for BROMIDES are keeping quite steady. VANILLIN is steady with not much outside cheap material offering. Makers' prices for BISMUTH SALTS, IODINES, MERCURIALS and STRYCHNINE SALTS close the year at unchanged prices.

## Crude Drugs, etc.

AGAR-AGAR remains dull and is rather unsteady on spot and for shipment at former rates.

BALSAMS.—Market is very steady. *Tolu*, 3s. 5d. to 3s. 6d.; Canada, about 3s. 4d. per lb. as to quantity.

BUCHU.—A small business continues, with spot very steady. Good green rounds, 1s. 3d. to 1s. 4d.; fair to

medium, 1s. to 1s. 2d.; ovals, 8½d. to 9½d. per lb. as to quantity.

CAMPHOR.—So far there is little interest in Japanese with spot: slabs, 2s. 3d.; flowers, 2s. 3d.; tablets, 2s. 9d. per lb.; shipment, slabs, 1s. 10½d.; flowers, 1s. 11d.; flowers, 2s. 4½d. per lb. c.i.f. English refined is unchanged at former rates.

CASCARA SAGRADA.—The tone on spot and for shipment continues firm at former figures. Spot, 1932 peel, 60s. per cwt.; shipment, 52s. 6d. per cwt. c.i.f., in minimum car-load lots.

CHAMOMILES.—Shipment quotations are being restricted and tend to advance; spot is fully steady.

CLOVES.—Market opened dull, with shipment rather easier. Zanzibar, spot, 63d.; shipment, January-March, 5½d. c.i.f. Madagascar, 6½d. per lb. spot.

COCONUT (DESICCATED).—The market is rather easier and dull. Spot, fine, 25s. 6d.; medium, 24s. 6d.; shipment, halves, December-January, 23s. per cwt. c.i.f.

COD-LIVER OIL.—Business is slow, but both spot and shipment are quite steady. Finest Lofoten steam-refined non-freezing medicinal oil, 94s. to 95s. per barrel c.i.f.; spot, about 110s. per barrel, ex store, duty paid.

GUM ACACIA.—The higher values for shipment recorded last week are maintained, but there is very little interest shown.

HONEY.—The market finishes the year very steady at good figures, with spot stocks unusually low.

IFPECACUANHA.—Market is dull, with Matto Grosso rather unsteady at 5s. 1d. to 5s. 3d. per lb.

MENTHOL.—This market is keeping quite steady, although there is not much business at the moment. K/S brands, spot, 18s. 1½d. per lb., and slightly less for bulk quantities; shipment, October-December, 16s. 1½d.; January-March, 16s. 3d. per lb. c.i.f.

MERCURY.—Spanish-Italian is quoted for shipment at 35 dollars per bottle f.o.b. Continental port and at 36 dollars ex store.

OPIUM.—Business is dull, with the market steady. Quoted for shipment at 1s. 2d. per unit landed and duty paid.

PEPPER.—The market has reopened quietly, with quoted values of Lampung and other sorts unchanged on the week. Spot, Lampung, 6d.; Tellicherry, 6½d.; Allepy, 6½d.; white Munfok, 6½d. per lb.

PIMENTO.—Market is dull but fairly steady. Spot, 3½d. per lb.; shipment, January-March, 25s. per cwt. c.i.f.

RUBBER.—This commodity has been neglected and values are fractionally easier on the week. Standard ribbed smoked sheet, sellers, spot, 2½d.; January, 2½d.; January-March, 2½d.; April-June, 2½d. per lb.

SARSAPARILLA.—Market continues steady; business small. Native, mixed colours, 1s. 1d. to 1s. 2d.; grey Jamaican, 1s. 9d. to 1s. 10d. per lb. as to quantity.

SEEDS.—Quoted prices for these articles were generally unchanged after the holidays, with business quiet throughout.

SENNA.—The demand for Alexandrian and Tinnevelly pods remains quiet, with spot values quite steady at former rates.

SHELLAC.—This market is dull, with recent low values keeping about steady.

WAX (VARIOUS).—There is no change to record in the values of these products; markets quiet. CARNAUBA, fatty grey and chalky grey, is steady at 87s. 6d.; medium yellow is steady at 140s.; fine yellow is unchanged at 155s. CANDELILLA, steady at 75s. per cwt. SPERMACETI, steady at 9½d. per lb. spot. PARAFFIN is about steady at from 22s. 6d. to 50s. per cwt. as to colour and melting point. CERESIN is quoted from 35s. to 80s. per cwt. as to colour and melting point. BEES' now very steady, with some inquiry on the market: bleached, discs, £7 10s.; slabs, £7 5s.; yellow refined is very steady at £5 15s.; yellow crude, 97s. 6d. per cwt. spot.

## Essential Oils, etc.

THE usual quiet reopening of the markets is recorded, with quoted values all very much on former levels. Bergamot is weak. Bay is being inquired for; the market is firm, with stocks low. Citronella is quiet but steady. Japanese peppermint is keeping up steadily at about former rates, with the shipment market reported strong.

**ANISE (STAR).**—Quoted prices on spot and for shipment are unchanged, with the market neglected and easy.

**BAY.**—There has been a good inquiry on the market. Values are advancing with stocks at a low level.

**BERGAMOT.**—Conditions in this market continue unsatisfactory. Both spot and forward are gradually moving down, and business is not easy to put through. Spot, about 7s. 6d.; shipment, not more than 6s. 4d. per lb. c.i.f. for quantities.

**BOIS DE ROSE.**—Brazilian is firm on spot at about 5s. 6d. per lb. Cayenne is nominal with practically nothing offering.

**CASSIA.**—Dealers quoting spot at about 3s. 8d. to 3s. 9d. per lb., as to quantity.

**CEDARWOOD.**—The Colonial and American products are steady and unchanged on quotation. Market has been quiet so far.

**CITRONELLA.**—Former prices for Ceylon and Java on spot and for shipment are maintained, and the markets are steady.

**LAVENDER.**—New crop French is quoted unchanged for shipment, with very few inquiries on the market.

**LEMON.**—Sicilian hand-pressed, new crop, is quoted for shipment at from 4s. 2d. to 6s. per lb. c.i.f. as to brand and quantity. Spot, about 4s. 3d. to 6s. 4d.; Californian, in large drums, 48 cents; in small drums, 49 cents per lb. spot.

**PEPPERMINT.**—So far interest in this market has been very poor, but with the shipment position healthy the market is steady. Japanese dementhrolised, spot, 6s. 7½d.; shipment, October-December, 6s. 4½d.; January-March, 6s. 9d. per lb. c.i.f. American peppermint for shipment is quoted in the region of 1 dollar 95 cents per lb. c.i.f. in drums, with some brands slightly cheaper.

**SPIKE.**—Some small business is moving with the market quite steady. Spanish, spot, 3s. 3. to 3s. 6d. per lb., as to quantity.

**VETIVERT.**—Spot stocks are much depleted with holders' prices fully maintained.

The following quotations are current for synthetics, etc.: Acetophenone, 6s. 3d. to 6s. 6d. per lb.; amyl acetate, pure, 125s. per cwt.; technical, 115s. per cwt.; amyl salicylate, 2s. 2d. per lb., in cwt. lots; aubepine, ex para cresol, is steady at 8s. 3d. to 9s. per lb.; benzaldehyde, f.f.c., 2s. 1d. to 2s. 6d. per lb.; benzyl acetate, f.f.e., 1s. 5d. to 1s. 9d. per lb.; benzyl alcohol is steady at 1s. 11d. to 2s. 3d. per lb.; bromstyrol, 100 per cent., is holding steady at 11s. 4d. to 11s. 6d. per lb.; butyric acid, 3s. 3d. to 3s. 6d. per lb.; citral, chemically pure, 8s. to 8s. 6d.; coumarin, 13s. to 14s. per lb.; ethyl phthalate, 2s. 8d. to 2s. 9d. per lb.; eugenol, 7s. 10d. to 8s. 6d. per lb.; geraniol, ex palmarosa, 16s. to 18s. per lb.

## U.S. Essential Oil Imports

UNITED STATES imports of essential oils for the period January-September 1932 increased in quantity by nine per cent. and decreased in value by 27 per cent., compared with the imports during the same period of 1931, as follows:—

	1931		1932	
Cassia and cinnamon ..	lb.	\$	lb.	\$
	228,000	175,000	234,000	118,400
Geranium ..	101,600	295,000	104,600	332,500
Otto of rose ..	1,026	176,200	909	99,800
Bergamot ..	63,400	108,700	35,600	65,400
Citronella and lemongrass ..	669,700	254,800	1,024,000	325,000
Lavender and spike lavender ..	201,000	400,500	130,300	154,600
Lemon ..	293,200	184,000	135,900	104,700
Orange ..	97,900	196,600	91,700	87,200
Sandalwood ..	7,600	36,600	3,800	16,100
All other ..	1,985,200	964,800	2,196,100	710,900
Total ..	3,648,626	2,792,200	3,956,909	2,044,400

## World Manufacture of Morphine, Diacetylmorphine and Cocaine

THE report of the Permanent Central Opium Board of the League of Nations (Allen & Unwin, price 9d.) gives the following particulars of production. Morphine: 1929, 55,453 kilog.; 1930, 34,423 kilog.; 1931, 28,398 kilog. Diacetylmorphine: 1929, 3,621 kilog.; 1930, 3,971 kilog.; 1931, 1,216 kilog. Cocaine: 1929, 5,699 kilog.; 1930, 4,718 kilog.; 1931, 4,075 kilog. The chief countries of production were as follows:—

Country	Year	Morphine				Diacetyl-morphine	Cocaine
		Total manufacture	Used in the manufacture of diacetylmorphine	Used in the manufacture of drugs not covered by the Convention	Morphine remaining as such		
Germany ..	1929	Kg. 24,000	Kg. 349	Kg. 18,620	Kg. 5,031	Kg. 387	Kg. 1,826
	1930	10,555	142	9,060	1,292	169	1,153
	1931	4,994	48	4,060	836	58	1,020
France ..	1929	12,141	1,057	6,407	4,677	1,343	911
	1930	12,495	1,995	6,667	3,833	2,216	831
	1931	8,734	168	6,344	2,222	193	373
United States of America	1929	8,374	—	5,769	2,605	—	846
	1930	5,373	—	3,461	1,912	—	723
	1931	7,728	—	5,273	2,455	—	870
Great Britain	1929	4,577	193	2,848	1,536	223	238
	1930	1,911	94	658	1,159	107	318
	1931	1,012	75	190	747	85	381
Switzerland .	1929	4,140	62	5,475	[minus] 1,397	68	344
	1930	1,844	4	1,874	[minus] 34	4	328
	1931	4,001	28	3,266	807	31	155
Japan ..	1929	1,989	1,171	—	818	1,590	1,215
	1930	1,904	1,080	—	824	1,396	1,192
	1931	1,347	532	—	815	688	1,008
Chosen ..	1929	—	—	—	—	—	—
	1930	156	43	—	113	70	—
	1931	328	108	—	220	144	—
India ..	1929	43	—	—	43	—	—
	1930	65	—	—	65	—	—
	1931	72	—	—	72	—	—
Italy ..	1929	69	11	1	57	10	—
	1930	29	9	2	18	9	—
	1931	—	—	—	—	—	—

World stocks on December 31, 1931, were as follows. The report states these figures are incomplete, as returns from twelve countries were not received in time: Morphine, 8,565 kilog.; diacetylmorphine, 1,161 kilog.; cocaine, 3,821 kilog.

## Business Changes

MR. T. JENKINS, chemist and druggist, has taken over the business of Mr. W. Morgan James, Builth Wells.

MR. JOSEPH GARDNER, chemist and druggist, has acquired the business of Mr. James Stewart, Kirkintilloch.

R. FAULKNER & Co. have commenced business at 189 High Road, Wembley, as specialists in medicinal confectionery.

MR. G. W. R. COUZENS, chemist and druggist, has acquired the business of Mr. T. Jenkins, chemist and druggist, Crickhowell.

MR. J. A. PARKER, chemist and druggist, has acquired the business of Mr. E. G. Price, Ph.C., 280 High Street, Lewisham, S.E.13.

MR. G. LOXTON GRINSTEAD, chemist and druggist, has acquired the business of Thompson & Walton, chemists, 73 High Street, Maidenhead.

MR. T. A. NETHERTON, chemist and druggist, has opened a new pharmacy in the entrance hall of the new Mersey ferry approach at Seacombe.

BRANDHURST Co., Ltd., Vintry House, Queen Street Place, London, E.C.4, are taking over the business of Chemicals & Coke Ovens, Ltd., as from January 1, 1932.

# Correspondence

Letters should be written on one side of the paper only. Correspondents may adopt an assumed name, but must in all cases furnish their real name and address to the Editor.

## British Goods in France

SIR,—We can only apologise to Mr. Toogood if our letter, which appeared in your issue of December 17 on the subject of large and obviously fraudulent inquiries received from France, was taken by him to be a reflection either on French pharmacies in particular or on legitimate French business in general. We intended nothing of the sort. Indeed, our warning was given quite as much in the interests of French as of British trade. Had we, for instance, fallen into the traps laid for us, the French market would have been flooded with large quantities of pharmaceutical preparations which, as they would never have been paid for, could have been spread about in France at cutthroat prices to the grave detriment of our many friends in the pharmaceutical business there. We should like to assure Mr. Toogood that we are fully alive to the value of the French market, especially where sales through pharmacies are concerned. It is true that the present restrictions on the importation of goods into France make it exceedingly difficult and onerous to extend business, but we have many excellent friends among the pharmacists in France and are frequently visiting them. The writer gladly accepts Mr. Toogood's invitation to call upon him next time he is in Paris, which will probably be at no very distant date.—Yours faithfully,

HOWARDS & SONS, LTD.,  
GEOFFREY E. HOWARD, Director.

Ilford.

## Proprietary Articles Trade Association

SIR,—We desire to tender, through your columns, our very sincere thanks to the retail members of the P.A.T.A. for the vote of confidence extended to us in the recent election to the retail section of the Council, and for their appreciation of our consistent efforts on behalf of the system of price maintenance for which the P.A.T.A. stands. We, as men in retail business, not only realise the essential importance of the P.A.T.A. to the prosperity of retail pharmacy, but, through our work on the Council, we are able to obtain a proper estimate of the difficulties and problems which the Association has to face in its task of making its price-maintenance work effective. It is gratifying to note that on a heavier poll than has been experienced in any P.A.T.A. retail section election since the war we have been returned by a handsome majority. In thanking those members who have given us this vote of confidence, we would like to take the opportunity of assuring them that, while on the Council, it will be our constant endeavour to forward their interests and those of the Association, and to do our utmost to maintain unimpaired the splendid price-protection organisation which the chemists of this country owe to the genius and enterprise of its founder, the late Sir William Glyn-Jones.—Yours, etc.,

N. N. ARMITAGE, Leeds.  
J. E. FRENCH, Sittingbourne.  
J. MILNER, Greenwich.  
J. SMITH, Dublin.

## Pilfering

SIR,—The disappearance of a couple of bottles of perfume from the counter during the rush hours on Christmas Eve reminds me that pilfering is a continual source of annoyance to the chemist in business. Pilferage of goods in transit has practically ceased since packers adopted the fibre case; it is among articles displayed in the pharmacy that the loss chiefly occurs. The one-man business, where the counter is frequently left unattended for short periods, is particularly liable to pilfering. Various devices have been recommended for the protection of goods, such as arranging them so that the removal of one will bring several more toppling down, or attach-

ing them to the counter in such a way that they cannot easily be "lifted." But since the essence of the open display is that articles may be freely examined and handled, these devices are of little practical use. I have frequently observed that goods are exposed in a way that gives the maximum opportunity for theft. I make a practice of showing articles in their original outers whenever possible, rather than leaving them lying about loose. However disagreeable it may be to spy on one's customers, if an epidemic of pilfering breaks out one must, in self-defence, keep them under observation. If a customer is caught red-handed how is one to deal with the situation? Much will depend on the age, sex and social status of the culprit. I suppose that one is under a legal obligation to hand all such offenders over to the police, but I am hazy on this point, and should welcome enlightenment. I have sometimes detained a thieving child, and enlarged on the enormity of the offence, and the unpleasant consequences of a life of crime. . . . If the culprit is a woman, and one has indubitably seen an article pass from the counter to her handbag or shopping basket, perhaps the simplest way out of the situation is merely to charge for it along with the goods actually purchased, enumerating the items and adding "and the bottle (box, etc.) of \_\_\_\_\_, madam." Thus one avoids a scene. But usually the thief goes undetected, and unless one is prepared to enclose all stock in glass cases one must make up one's mind to suffer some loss from pilfering.

Yours faithfully,  
EVER WARY (28/12).

## Legal Queries

*W. G. C. (15/9).*—Known, admitted and approved remedies may be sold unstamped by chemists and persons who have served a regular indentured apprenticeship to a chemist and druggist.

*S. G. B. (22/10).*—Are apprentices, by custom or otherwise, under any liability to their employers for breakages? [In the absence of a special clause in the indentures, apprentices are not, so far as we are aware, under any liability to their employers in respect of breakages; nor would carelessness of this kind appear to be a ground upon which an apprentice could be discharged.]

*L. M. (9/8).*—Insurance Committees are empowered to contract with registered chemists and limited companies (carrying on the business of a chemist and druggist in accordance with the provisions of the Poisons and Pharmacy Act, 1908) to dispense prescriptions and supply drugs and appliances to insured persons. Persons and companies in this class undertake as a part of their contract that all medicines supplied by them to insured persons shall be dispensed either by or under the direct supervision of a registered pharmacist, or by a person who, for three years immediately prior to December 16, 1911, has acted as a dispenser to a duly qualified practitioner or a public institution.

*J. R. D. (12/11)* asks for information about Section II, Sub-sections (1) and (2) (b), of the Rating and Valuation Act, 1925. [It is provided by Sub-section (1) that in the case of property of which the rent is payable at shorter intervals than quarterly, or of which the rateable value does not exceed £13, the local rating authority may direct that the owners shall be rated instead of the occupiers. If, in such circumstances, an owner pays the rates before the expiration of one-half of the period in respect of which the rates

are payable, he will be entitled to an allowance equal to 10 per cent. of the amount due. But, by virtue of Sub-section (2) (b), the allowance will be increased to 15 per cent. if the owner of the property enters into an agreement with the rating authority to pay the rates by a certain date, whether the property is occupied or not.]

*E. S. (12/9).*—Since an unqualified person is not entitled to carry on the business of a chemist and druggist or to sell poisons, the course suggested in your letter would constitute an offence against the provisions of the Pharmacy Acts. The only course which can be adopted in the circumstances is to form a limited liability company, in which case the control and management of the business must be placed in the hands of a superintendent who is a duly registered pharmaceutical chemist or chemist and druggist, and whose name has been notified to the registrar of the Pharmaceutical Society. However, unless the superintendent is a member of the board of directors of the company, you may not use the description "Chemist and Druggist" or any other reserved title. Particulars of the steps to be taken for the formation of a limited liability company are given in the *C. & D. Diary*, 1933.

*P. C. B. (28/10).*—The course for you to follow is to apply at the forthcoming Licensing Sessions in February next for a licence to sell wine by retail "off." The procedure to be followed in applying for this you will find in *The Chemist and Druggist Diary*, 1933, p. 310. It is just possible that when the application comes on you will be asked to accept the licence subject to an understanding that you will confine your sales to wines which are medicated. These may be specified by name or the restriction may be expressed as that you are to sell only medicated wines under the licence. If the licence is granted in this form there is no legal obligation on you to comply with such a condition, as the justices have no authority to impose it; but when you apply to have the licence renewed the following year it is open to the justices to refuse the renewal. The ordinary licence to retail wine requires, strictly, both a justices' licence and an Excise licence. But the Commissioners of Customs and Excise do not insist upon a licence being held for the sale of wines, which in their opinion are sufficiently medicated, and if the label on the bottle shows by the dosage that the liquid is intended to be taken as a medicine and not as a beverage.

## Subscribers' Symposium

For interchange of opinion among "C. & D." readers and brief notes on business and practical topics.

### Cascarilla Bark

"Aug. 17, 1763. For an ounce of Indian Bark to put into my Pipe when Smoaking pd. o.o.6d. It gives the tobacco a pretty smell and taste." This entry in "The Diary of a Country Parson" raises the question of when cascariilla bark was first used by the "smoaker." Is there an earlier record?—*J. S. (21/11).*

### A Contrast

There has been a round of addresses at meetings of the various associations on the new Pharmacopœia, and as one of them was advertised within reach of my locality, recently, I attended. For an hour I sat and listened to an expert explanation of the whys and wherefores of the alterations, additions, and deletions. I heard about the requirements of the International Agreement, the inclusion of vitamin preparations, the standardisation of thyroid and many other scientific details, and afterwards there was a discussion mostly devoted to the questions of ipecacuanha wine and Parrish's food. In the interval between the discussion and the vote of thanks the man on one side of me asked what was the cut price for liver salts in my town, and the one on the other side inquired if I had any demand for bath salts with free gifts of necklaces.—*Edified (5/12).*

## Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for, and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

*N. K. P. (17/38).*—DANDRUFF TREATMENT.—This complaint requires for its treatment and cure external medications in the form of ointments, shampoos and hair tonics, and these should contain antiseptics, parasiticides and stimulants. The following formulas indicate the type of preparation:—

<i>Scalp Tonic</i>				
Resorcin	..	..	..	10 gm.
Chloral hydrate	..	..	..	5 gm.
Camphor	..	..	..	0.2 gm.
Tincture of cantharides	..	..	..	10 gm.
Alcohol	..	..	..	50 gm.
Oil of geranium,				
Oil of bergamot,				
Oil of lavender,				
Oil of bitter almond	of each		0.25 gm.	
Glycerin	..	..	2 gm.	
Distilled water	..	..	to make 1,000 gm.	

Colour with trace of aniline dye. Filter perfectly clear and bright.

Apply to scalp three or four times a week and rub in thoroughly.

### *Ointment for Dandruff*

Salicylic acid	..	..	gr. x.	gr. x.	d.
Precipitated sulphur	..	..	gr. xv.	gr. xv.	
White petrolatum	..	..	gr. vi.	gr. vi.	
Oil of geranium	..	..	gr. vi.	gr. vi.	
Oil of bergamot..	..	..	gr. viij.	gr. viij.	

Apply once or twice a week. Follow with shampoo the next morning.

*A. E. S. (17/28).*—PRESCRIPTION PRICING.—The following is the method of pricing the prescription according to the *C. & D.* Retail Price List:—

Sod. sal.	..	..	gr. x.	240	3.0
Pot. iod.	..	..	gr. v.	120	12.0
Guaiacol carb.	..	..	gr. v.	120	8.0
Am. carb.	..	..	gr. ij.	60	1.0
Ext. glycy. liq.	..	..	fl. xv.	3vj.	3.0
Pulv. trag. co.	..	..	—	—	2.0
Aq.	..	..	ad 3ss.	3xij.	5.0
				Fee	8.0
				Container	3.0

Charge 3s. 9d.

45.0

## Retrospect of Fifty Years Ago

Reprinted from  
"The Chemist and Druggist," December 15, 1882

### Competition

As this year is rapidly drawing to a close, perhaps a few lines on the subject of competition from outsiders may not be out of place, especially as this year has been one of masterly inactivity on the part of chemists . . . Do the medical profession stand calmly still and allow unqualified practitioners to usurp the functions for which they are specially trained? . . . They aim that the practice of medicine and surgery shall be only in the hands of the qualified. So ought we, having a Pharmacy Act, to improve it and bring it to pass that the business of chemist and druggist should only be in the hands of the qualified, not in the hands of any speculative traders or society who like to take out a patent-medicine licence or employ a qualified man. Surely out of 600 members of Parliament someone can be found who could explain why we required a little more stringent laws, not simply for the sake of gaining a few extra pence, but that an important calling should be carried on only by the trained and qualified. [From a letter to the Editor.]

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DON'T SAY SUPER-QUALITY  
SAY**

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**IT'S SHORTER—AND—IT MEANS THE SAME THING**

## “SPUN” OINTMENTS

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Telephone :  
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Telegrams :  
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**ROBERT BLACKIE** SHEN WORKS,  
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**23,375**

total Renipas users to date, being 124 more than when we advertised a fortnight ago. This flowing tide of trade is flowing around your establishment, and you have only to welcome it to have your share.

## RENIPAS

Buyers in your district are yours for the taking.

Renipas is stocked by principal Wholesalers such as :—  
Butler & Crispe, May Roberts, Barclays, Edwards, Newberys, Sangers, Holders (Bristol), Daniels (Derby), Butler, St. Dalmas and Wands (Leicester), Evans Lescher & Webb, Thompson and Sumner (Liverpool), Barnes & Crompton (Preston), Hedges (Birmingham), McMullan (Belfast).

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## CHEMISTS

If you do not stock the NATIONALLY  
ADVERTISED line

## CONSTIPON

we will send you a small supply with all  
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**SALE OR RETURN**  
CONSTIPON GLASGOW, C.2.

AN OLD-FASHIONED—BUT REALLY EFFECTIVE  
remedy for COUGHS, COLDS, IN-  
FLUENZA and BRONCHIAL troubles.

**licoricine**  
ACTS LIKE MAGIC

Prices 10½d., 1s. 3d. and 3s.

MANDALL & CO. Ltd., 17/23 Stepney Rd., Newcastle-on-Tyne.

### TERMS.

10½d. size, 8/6 per doz.  
1/3 " 12/- "

3/- " 27/- "

Less 5% dis. on £6 orders.

Carriage paid on orders of  
£2 and over.



NOW AVAILABLE AT  
**BONUS TERMS**  
(OVER 70% PROFIT)

## COLLOSOL BRAND HALIBUT LIVER OIL & MALT EXTRACT

1 lb. jars at 2/6. 2 lb. jars at 4/6.

## CROOKES' STANDARDISED COD LIVER OIL

Vitamin A value not less than 25 blue units.  
Vitamin D value not less than 4,000 international units per oz.

8 oz. 2/-.

16 oz. 3/6.

NOT MERELY BRITISH MADE BUT BRITISH THROUGHOUT

Write for particulars to :—

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PARK ROYAL, LONDON, N.W.10

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3/-  
EACH

PATENT  
APPLIED FOR



**K-D** Your medicines, delicate instruments, tools, cigarettes, etc., all can be taken care of by using K-D.

- K-D** Keeps salt and sugar dry
- K-D** Keeps biscuits crisp
- K-D** Keeps jam free from mould
- K-D** Keeps rust from your wireless set, piano, clock, etc., etc.
- K-D** For wardrobe & linen cupboard
- K-D** Detects and corrects damp beds

**K-D** Lasts for Years !

Obtainable from ALL WHOLESALEERS or from :  
Sole Distributors :—ELMESAN (London) LTD.  
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# MORE POPULAR THAN EVER...



Easy to see why Snowfire Cream goes on increasing in popularity. Its purity and fragrance, its greaseless vanishing quality and its real beautifying properties make it the favourite everywhere. Every customer you make means more to come—every satisfied user tells her friends about Snowfire. So make good displays—brisk sales and good profits will result.

Handbag Containers 3d.

Dainty 6d. Tubes

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# Snowfire VANISHING CREAM

Manufactured by  
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**For OVER 75 YEARS**

**Dr. J. Collis Browne's  
CHLORODYNE**

has maintained a

**WORLD-WIDE REPUTATION**

**TO-DAY'S DEMAND BEING  
GREATER THAN EVER.**

**ARE YOU GETTING  
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Be sure you hold stocks  
to meet the demand and  
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**IS ONLY SOLD THROUGH CHEMISTS**

**SIZES 1/3, 3/-**

Order from your Wholesaler  
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**MEL ROSE —  
TABLETS**

FOR  
CHAPPED  
HANDS, &c.

Manufactured for close on 50 years



The public demand is  
maintained in spite of  
many imitations, and  
Chemists can rely on  
sales all the year round.  
*Look to your Stocks.*

**2d. and 4½d.**

**MEL ROSE —  
CREAM**

*Sold in Jars for the Dressing Table.  
Contains all the remedial properties of  
the Tablet made up in a softer form.*

**9d.**

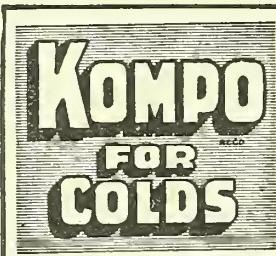
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2 SKIPTON ST., LONDON, S.E.1



**G. E. THURLEY & SON**

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**Wholesale  
Prices**

1/3 Size  
11/6 per dozen net  
3/- Size  
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Carriage Paid Gross Quantities  
or equivalent.

*Manufactured only by*

**J. F. WHITE & CO., Chemists**  
BENSON STREET, LEEDS.

# OUR SIDE AND YOURS THE 'ASPRO' SALES POLICY



Two factors operate to produce for you the maximum 'ASPRO' sales. One is the 'ASPRO' advertising to the public which is carried on by the largest newspaper campaign of its kind in the world, backed up by periodic distribution of broadsheets and booklets into almost every home in the country. The other is the vast window display service available for all chemists. When you show an 'ASPRO' window display you definitely connect up with this huge advertising campaign. You obtain direct benefit in greater 'ASPRO' sales and additional benefit from the sale of other goods which you can sell to customers who come into your shop for 'ASPRO'. It definitely pays to show 'ASPRO' display matter in your windows continuously. Frequent changes are available so it does not get out of date. You can also increase your sales by utilising the 'ASPRO' advertising bag and envelope service. You make a definite saving, too. The prices are given below. Then there is the 'ASPRO' bonus which is equivalent to 17 per cent. extra profit if you buy 'ASPRO' on bonus terms. Why not order a bonus parcel through your wholesaler to-day and write us for an 'ASPRO' window show and a supply of bags or envelopes so as to obtain the maximum benefits from the large amount of 'ASPRO' sales that are about.



**OUR SIDE, THE ADVERTISING SIDE, IS ALWAYS IN OPERATION, YOUR SIDE, THE DISPLAY SIDE, COMES INTO OPERATION WHEN YOU PUT IN AN 'ASPRO' WINDOW SHOW. THESE TWO FACTORS WORKING TOGETHER BRING INCREASED SALES ACTIVITY.**

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Kristal Envelopes	-	-	2/6 per 1,000	Cash with Order
Greaseproof 2oz. Bags	-	-	1/- per 1,000	
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### Agents :

GOLLIN & CO. PTY., LTD.  
('Aspro' Dept.) SLOUGH, Bucks.

Telephone : SLOUGH 608

'ASPRO' consists of the purest Acetylsalicylic Acid that has ever been known to Medical Science, and its claims are based on its superiority.

Made by **ASPRO LTD.**, Slough, ENGLAND

No proprietary right is claimed in the method of manufacture or the formula.

**'ASPRO'**  
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# PETROLEUM JELLIES

WHITE, LEMON, YELLOW, AMBER, RED, GREEN.

# WHITE & COLOURED OILS

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COLOURLESS, TASTELESS, ODOURLESS.  
ALL SPECIFIC GRAVITIES.

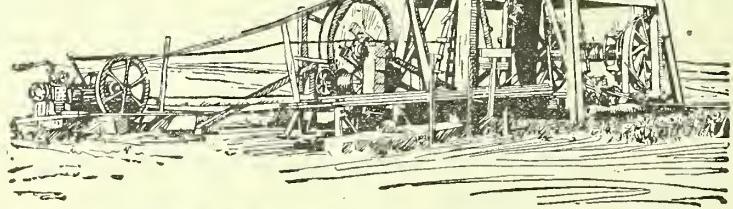
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*Wholesale Trade only.*

## STERNS LTD.

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# DRUMMER DYES

are constantly in great demand by women who realise the advantages of home-dyeing

It pays you well to stock and display

## DRUMMER DYES

safe  
easy



and  
sure

EDGE'S

BOLTON



Order from  
**JAMES WOOLLEY,**

**Sons & Co., Ltd.** USED by Silversmiths to preserve the beauty of their own wares, it is SOLD by the leading hardware Stores in the country and is ASKED for by housewives everywhere.

**AYRTON, SAUNDERS & Co., Ltd.** Liverpool It has no rival for cleaning Gold, Silver

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**GOODALL, BACKHOUSE & Co., Leeds** Stockists don't have to SELL "Town Talk"—they are asked for it.

**MAY, ROBERTS & Co. Ltd., London** Link up with our energetic Sales Service.

or direct from the sole makers.  
Terms and samples from :—

**TOWN TALK POLISH CO., MANCHESTER**

# For 1933

here are some sensible Resolves, worth making and worth keeping :

- to make more profit ;
- to be more competitive in pack and price ;
- to get ever quicker Deliveries ;
- to be certain I am always buying right ;  
and, therefore,

**—to LET GOODALL'S QUOTE**



Waterglass, Malt - and - Oil, Olive Oil, Tablets, Packed Drugs and Pharmaceuticals, the Ku-bist Series, are all great features of ours.

**GOODALL, BACKHOUSE & CO.,  
LEEDS**

Our January List is almost ready. Please ask us to reserve you a copy.

# PURE MALT EXTRACT

*with FINEST*

# NORWEGIAN COD LIVER OIL

*The Brand that does not separate nor crystallize.*

*Your own name and address on labels. In English jars, etc. Direct from the actual manufacturers.*

**THE BRITISH DIAMALT COMPANY**  
SAWBRIDGEWORTH - - - HERTS.

*London Representative—*

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## MASON'S EXTRACT OF HERBS

May we have the pleasure of sending you particulars of our Window Display Scheme?



**NEWBALL & MASON**  
LIMITED  
NOTTINGHAM

## CORKS

OF EVERY DESCRIPTION

*Send us your Enquiries,  
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Camperdown St., and Gt. Alie St., London, E.1.  
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## METALLIC CAPSULES

*for all purposes.*

**The Tonkin Metallic Capsule Co.**  
Proprietors - C. Olley & Sons, Ltd.



## The Source to National Health.

Read what the „Lancet“, the leading medical journal says in the copy of 15th Oct. 1932 about Norwegian cod-liver oil: „ - - - - The protective foods - milk, butter, eggs, fruit, and vegetables are the first to be sacrificed in time of hardship. It is at such times that cod-liver oil is

most required to counteract the evils of an excessively cereal diet; and if steps could be taken to increase, perhaps tenfold, the consumption of cod-liver oil by children and young persons, something definite would have been done to counteract the effects of the present depression.“

# NORWEGIAN COD LIVER OIL

World known for its high quality.



# PHARMACEUTICAL

HIGHEST

DISPENSING  
BOTTLES.  
CHEMISTS  
ROUNDS.  
EEFING  
BOTTLES.  
SOXHET  
BOTTLES.  
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SPRINKLER  
BOTTLES.  
OPAL AND  
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GLASSWARE

QUALITY  
GLASSWARE

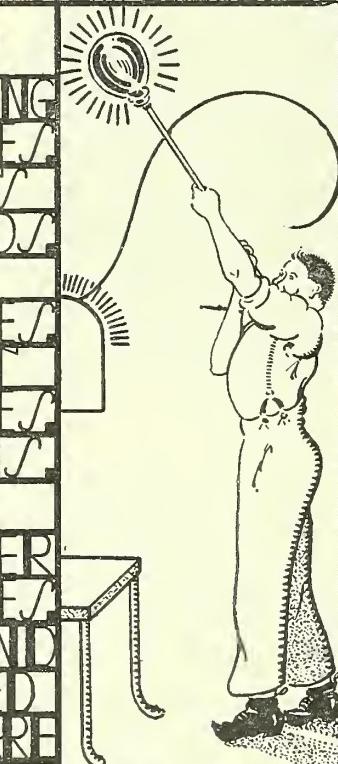
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DESIGNERS & MANUFACTURERS  
OF GLASSWARE FOR PERFUMES  
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**WOOD BROS. GLASS CO.  
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TAPERED, PYRAMID, DOMED AND  
FLANGE **CORKS**

COMPOSITION AND BAKELITE  
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THE MOST COMPETITIVE MANUFACTURERS IN  
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**MUNDET CORK PRODUCTS, LTD.**

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Telegrams : MUNDETCOMP, BERM, LONDON

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NOW BRITISH MADE  
**WAGNER'S DRY BOTTLE CAPS**  
BEST IN QUALITY & APPEARANCE



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Your Opportunity to  
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PRACTICAL WORK. Personal tuition in the practical work is a distinctive feature. Students can avail themselves of the practical classes held during examination times when they are in London.

Expert Tuition for the SIGHT-TESTING DIPLOMAS of the Worshipful Company of Spectacle Makers (F.S.M.C.); the British Optical Association (F.B.O.A.); the National Association of Opticians (F.N.A.O.); or the College of Optics (F.C.O.)

Write for full particulars—

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**Liverpool School of Pharmacy**

Principal—H. HUMPHREYS JONES, F.I.C., Ph.C., F.C.S.

**NEW SESSION.**  
Preparation for the Preliminary Scientific and Qualifying Examination of the Pharmaceutical Society.

NEW SESSION HAS JUST COMMENCED.  
Revision Students for both Examinations can be taken.

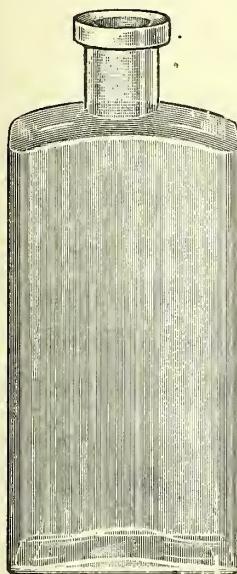
SEND FOR BOOKLET—POST FREE—BLACKBURN PLACE.

**BEATSON, CLARK**

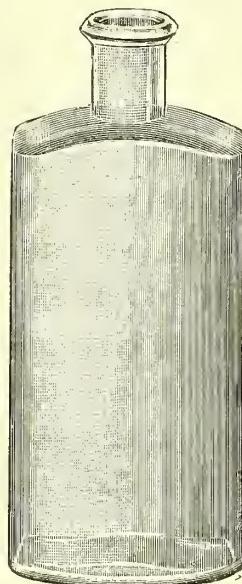
&amp; COMPANY, LIMITED

Chemical and Medical Glass  
Manufacturers,**ROOTHERHAM, YORKS**

*The Chemists who are doing  
the business are the Chemists  
who turn the work out well.*



Round Cornered Flat



Oval Fronted Flat

*There is no better help than  
a smoothly finished, bright,  
attractive bottle.*

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**REASONABLE IN PRICE  
SATISFACTORY in FINISH**

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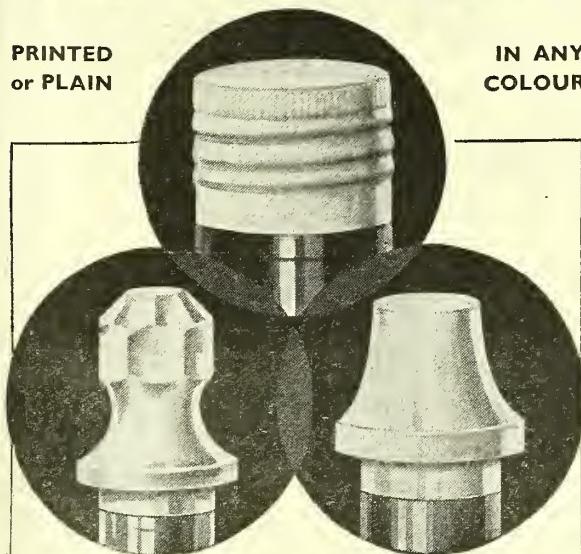
Telegrams: BEATSON, ROTHERHAM.

'Phone: No. 88, ROTHERHAM.

**ESTABLISHED 1751**

# VIISKAP

SELF-FIXING  
**BOTTLE CAPS**

PRINTED  
or PLAININ ANY  
COLOUR**PROTECTION**

first, last and all the time is definitely assured when your product is sealed with a Viskap. Place a wet Viskap in position—let it dry—seals as it shrinks. Perfectly hygienic. Entirely British.

ALSO

## MOULDINGS OF ALL DESCRIPTIONS

FROM

**Bakelite & Similar Materials**

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*Send us your enquiries.*

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We have a reputation of many years of service and quality to keep up and are anxious to help you.

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**LET US ADVISE AND QUOTE YOU**

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**VISCOSE DEVELOPMENT CO., LTD.,  
WOLDHAM ROAD, BROMLEY, KENT**

Telephone: Ravensbourne 4561

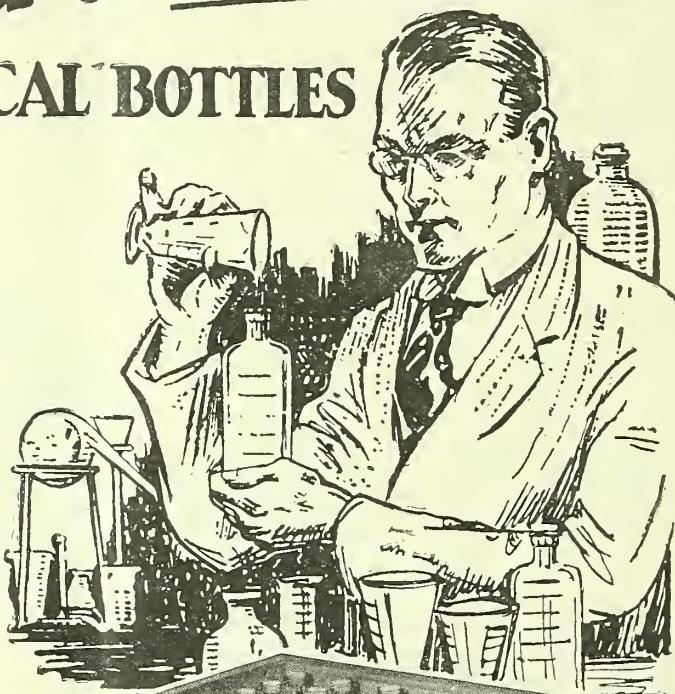
# U.G.B. Washed & Sterilised MEDICAL BOTTLES

MODERN annealing ovens deliver bottles bright and sterile. Packed without special treatment a film will gradually appear on the surface of the glass. Hence the necessity of our scientific sterilizing process passing bottles through boiling distilled water and drying in super-heated filtered air before packing in dustproof cartons. How vastly superior to many competitive makes of so-called "washed and papered" bottles which are generally only rinsed in none too clean ordinary water.

OUR SALES of this UNIQUE SERVICE STEADILY INCREASE from year to year.

## ANNOUNCEMENT

In addition to the white enamelled Aluminium Screw Cap service, the full range of sizes complete with an attractive design of BLACK KORKALITE MOULDED CAP will shortly be available.



Photograph of actual package of Cork-mouth bottles with cover removed

Works at  
Charlton, Kent  
and  
St. Helens, Lancs.

## UNITED GLASS BOTTLE MANUFACTURERS • LIMITED

The largest manufacturers of Glass Bottles in Europe.

Head Offices :  
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Telephone : Temple Bar 6680 (10 lines). Telegrams : "Unglaboman, Strand, London."

**During 1933**

**BUY BRITISH FINE CHEMICALS**

**SEND US**

**YOUR ENQUIRIES FOR**

**BROMIDES  
& IODIDES**

**EMETINE, EXTRACTS, ATROPINE, CAFFEINE, NICOTINE, REFINED  
CAMPHOR, VERMILION, STRYCHNINE, SALICIN, QUININE**

**WHIFFEN  
& SONS LTD.**

**CARNWATH ROAD, FULHAM, LONDON, S.W.6**

*Telephone: Fulham 0037*

*Telegrams: Whiffen London*

*Codes: A.B.C. and Bentleys*

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We have largely extended our Service Department and can offer you assistance on the following points:

- 1 Design** of Labels,  
Cartons, &c.
- 2 Design** of suitable  
Containers.
- 3 Printing** the above,  
together with suitable  
advertisement material  
to increase sales.
- 4 Advice** on formulæ, stamp  
duty, and other doubtful  
questions which may  
concern you.

Should you, therefore, be contemplating the introduction of a new product, whether Pill, Tablet or Liquid, may we suggest that it would pay you to get into touch with us.

We will give estimates and submit Artist's design without obligation for your approval.

MANUFACTURING CHEMISTS

**ARTHUR H. COX & CO. LTD.**  
B R I G H T O N

# THE CHEMIST AND DRUGGIST



## SUPPLEMENT

28 ESSEX ST.  
LONDON, W.C.2

DECEMBER 31, 1932

*This Supplement is inserted in every copy of The Chemist & Druggist.*

### THE CHEMIST AND DRUGGIST SUPPLEMENT

#### ADVERTISEMENT - TARIFF -

**ALL ADVERTISEMENTS** are PREPAID, so that remittance must accompany instructions in each case. If it be necessary to telephone or telegraph an urgent announcement this may be done, provided the money is telegraphed at the same time.

**BUSINESSES WANTED** and for **DISPOSAL, PREMISES TO LET, PREMISES WANTED, PARTNERSHIPS, GOODS for SALE and AGENCIES**—**6/- for 50 words; every additional 10 words or less, 6d. (Box No., 1/- extra.)**  
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**LEGAL NOTICES, TENDERS, AUCTIONS**, and all specially-spaced announcements, **1/3 per nonpareil line (12 lines=1 inch single column). (Box No., 1/- extra.)**  
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**THE CHEMIST & DRUGGIST, 28 Essex St., Strand, London, W.C.2**

Telephone: Central 6565 (8 lines). Telegrams: "Chemicus, Estrand, London."

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MUST REACH US  
NOT LATER THAN

FIRST POST

ALL ADVERTISEMENTS INTENDED FOR  
INSERTION IN THIS SUPPLEMENT  
THURSDAY MORNING.

### ORRIDGE & CO.

56 LUDGATE HILL, E.C.4

ESTABLISHED 1846

Telephone No.: CITY 2283

May be CONSULTED at their Offices on MATTERS of SALE, PURCHASE & VALUATION.

We make no charge to purchasers, and invite intending buyers to communicate with us, stating their requirements.

1.—KENT.—General Retail Business with fair amount of N.H.I.; very old established and for sale owing to death of proprietor; average turnover for last 3 years £3,500; net profit £688; excellent main road position; new lease would probably be granted; ample living accommodation; price £1,000 for goodwill and fittings, etc., plus stock at valuation.

2.—LONDON, N. (Distant Suburb).—Middle-class Business with Kodak Agency; approximate turnover £2,500 per annum, with scope to resuscitate former large Optical connection by qualified optician owner; audited accounts; attractive double-fronted shop, very well fitted; net rent £85 per annum; held on lease; further details to genuine purchasers.

3.—EARL'S COURT.—Good-class Family Retail and Dispensing Business; returns for current year almost £20,000; gross profit £655; attractive single-fronted shop, very well fitted and stocked; rent £175; sub-let £72; nearest opposition  $\frac{1}{2}$  mile away; price £1,350, or valuation terms entertained.

4.—SOUTH COAST.—Light Retail and Dispensing Business with Kodak Agency; returns this year £1,357; net profit £317; double-fronted lock-up shop in semi-main road; estimated value of stock and fittings £650; rent £45; price £850 or near offer; this business is situated in a good-class health resort, which also has a considerable resident population.

5.—ESSEX.—Good-class Business with Private Dispensing and Kodak Agency; established 40 years; turnover for last financial year £5,400; good prices are obtained; the business is in a main shopping thoroughfare and in close proximity to the railway station; there is a six-roomed house; 20 years' lease; lump sum offer or valuation terms entertained; this concern is thoroughly genuine and has been known to this firm for many years.

6.—SUTTON (Near).—Middle-class Retail Business in thickly populated district; returns approach £1,500 per annum; attractive double-fronted shop, extremely well fitted; house contains 5 rooms, bathroom, garden, etc.; option to take up new lease; price £650, plus valuation of stock.

7.—BERKS.—Light Retail Business; Kodak and Ucal Agencies; returns £914 this year; large single-fronted shop; estimated value of stock and fittings £500; very good house; private entrance and large garden; 21 years' lease; reasonable rent; price £600; to a man fond of country life this business offers scope for increased turnover.

SALE  
PROBATE  
INCOME  
TAX

SPECIAL  
LOW  
TERMS for  
STOCK-  
TAKING

**VALUATIONS**

Orridge & Co.

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ESTABLISHED  
NEARLY A CENTURY

# BIRD & DODGE LTD.

41 ARGYLL ST., KING'S CROSS, W.C.1

ONE MINUTE FROM KING'S CROSS AND ST. PANCRAS STATIONS.

PHONE  
TERMINUS 3574

ESTABLISHED  
1870

Chemists' Valuers and Transfer Agents

1.—CHESHIRE.—Good-class Semi-country Business, with Optics; returns last year £1,725; net profit £395; stock and fixtures worth approx. £900; illness necessitates early sale; price £1,100, or £875 without Optics.

2.—MIDLANDS.—Good-class light Suburban Retail for immediate Disposal; present returns £25 to £30 weekly, normally £35 to £45; good house; rent £70; large shop; main road position; stock and fixtures worth £700; price £850, or near offer.

3.—SURREY (25 miles out).—Unopposed good-class Family and Dispensing Business in growing district; returns approach £1,250; good profits; modern house, every convenience; good stock; price £950, or offer.

4.—SOUTH DEVON.—Sound general Family, Retail and Dispensing Business, in small market town; returns £1,200, increasing; good house and garden; excellent stock; price £950.

5.—LIVERPOOL.—Light Cash Suburban Business, returning under manager, £1,450; gross profit £550; splendid position on new housing estate; scope for increase; modern fitted pharmacy, well stocked; long lease; price about £700.

6.—LONDON, N.W.—Light Retail and Dispensing Business for quick disposal, in good-class and growing district; returns £1,870; steady increase last three years; low rent; long lease; stock and fixtures worth about £750; price £1,100, or offer.

7.—LONDON (Essex Suburb).—Sound working-class Cash Retail Business; present returns average over £20 a week; rent only £35; long lease; comfortable house; price £500, or £225 and stock at valuation.

8.—KENT COAST.—£1,000 secures a good-class, well-established Business, in good residential district; returns £1,750; scope for increase; rent covered by sub-let; well-fitted shop, fully stocked; bare valuation accepted for quick sale.

9.—ESSEX (Near Coast).—Well-established Mixed Chemist's Business; good Photo connection; returns over £2,100; books audited; low rent; on lease; good position; price £1,250.

10.—DERBYSHIRE.—Old-established Business in busy town; returns average £1,350; good profits; rent £52, on lease; corner shop; well fitted and fully stocked; no near opposition; price £800.

11.—BANKS OF THAMES.—Cash Drug and Photographic Store; returns last year £1,500; good chance for qualified Chemist; present returns are down through neglect; price £100 for quick sale; stock at valuation.

12.—SOUTH WALES.—Good-class Country Business, charmingly situated in small market town; returns over £1,700, increasing; very low expenses; modern house; well-fitted shop, heavily stocked; price valuation, plus £150 goodwill.

13.—LONDON, N. (15 miles out).—Good-class Business in growing residential district and with excellent prospects; returns, under manager, £1,568; handsome modern pharmacy; good house; large garden; price £1,250.

14.—LONDON, E.—Cash Retail and Prescribing, with small N.H.I.; returns £1,500, plus N.H.I.; rent £54, on lease; small living accommodation; net profit £350; ill-health necessitates sale; offers invited.

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The following businesses have in the main been visited, and are recommended to appropriate would-be purchasers.

(C1) SUFFOLK COAST.—Established retail and dispensing business with freehold property; extensive D. & P., particularly in summer months; present returns approximately £1,200 per annum; net profit as per tax statement for last financial year, £350; living accommodation; further particulars in strict confidence to genuine potential negotiators.

(C2) LONDON, S.E.—Old-established drug store and mixed business, situated in busy main thoroughfare; average returns upwards of £4,000 per annum (all cash); freehold property available, or lease will be granted; living accommodation; owner retiring; excellent scope for further increase under qualified proprietorship.

(C3) LIVERPOOL.—Old-established light retail business with good dispensing and photographic connection; in present hands over 20 years; average turnover for last three years under management approximately £2,400 per annum; net profit to a proprietor running the business personally should be in the region of £750 yearly; 10-roomed house available for immediate occupation, or could be sub-let if desired; rent of shop and house £104 per annum; a new lease for any period at purchaser's option will be granted; reason for disposal owing to semi-retirement; purchase price £550 for lease and goodwill, plus value of stock and fixtures.

(C4) KENSINGTON (NEAR).—Good-class retail business with small modern flat above; turnover approximately £2,000 per annum; no near opposition; exceptional connection in photographic trade and good class private dispensing; purchase price approximately £1,400; owner is prepared to consider retaining an interest in the business under approved conditions, or will sell outright.

(C5) MANCHESTER (NEAR).—Modern pharmacy and optical business, with freehold property, including exceptionally good flat above; returns for present financial year approximately £40 weekly, and steadily increasing; genuine scope for further increase; price asked for business £1,100, plus value of freehold, upon which a substantial mortgage could, no doubt, be arranged, if desired.

(C6) MIDLANDS COUNTY BOROUGH.—Cash business with good photographic connection and N.H.I.; returns for 1931-32, £1,800; rent and rates, £67, which includes 6-roomed house with garden; this business represents a particularly good profit-earning investment, and should be capable of further increase under personal proprietorship.

(C7) BIRMINGHAM (RESIDENTIAL SUBURB).—Good dispensing and photographic business situated in busy shopping part of main road; present returns approximately £30 weekly, with good scope for further development, and for the introduction of optics if desired; rent, £70 per annum, which includes excellent living accommodation; purchase price asked, £850 (offers considered).

(C8) ISLE OF WIGHT.—Old-established retail business with living accommodation; average returns approximately £1,350 per annum; net profit £350; rent and rates, £66 per annum; purchase price asked £1,150 or near offer, subject to valuation of stock and fixtures at purchaser's option.

(C9) DEVON.—Good-class family and dispensing business; turnover for last financial year approximately £1,200, with definite scope for expansion; good living accommodation, with large garden; rent £100; lease 21 years; purchase price by negotiation; offers exceptional advantages to a private chemist with enterprise and initiative.

(C10) YORKSHIRE.—Good class family and agricultural business, with exceptional scope for optics; established about 50 years; returns for last financial year, £1,300; rent, £32 10s. per annum; sub-let £19 10s. per annum; house available near by if required; purchase price for quick sale, £650, including stock and fixtures estimated at £460.

(C11) SUSSEX COAST.—Old-established retail business for disposal owing to recent death of proprietor; turnover for last financial year approximately £1,200; but there should be undoubted scope for increase under new energetic ownership; living accommodation; rent, £65 per annum; purchase price £950.

(C12) SOUTHERN COUNTY (CATHEDRAL CITY).—High-class pharmacy doing approximately £50 weekly; excellent living accommodation; which, if not required, could be sub-let on advantageous terms; good lease; pharmacy well stocked and fitted; further particulars on application.

(C13) LIVERPOOL.—Good-class business, at present under management, with scope for expansion under personal proprietorship; average turnover approximately £1,950 per annum; net profit to owner-proprietor would approximate £500; rent, £77 per annum, including small house; no near opposition; purchase price, goodwill £300, plus value of stock and fixtures; Kodak and Rexall Agencies; business established about 60 years.

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**LONDON** (S.W. suburb).—Well-fitted Shop, with living accommodation; long lease at reasonable rent; turnover averages £1,575 per annum under management; should increase considerably under personal control; price £250, plus stock at valuation; part purchase might remain. Preston & Partners, 29 Ludgate Hill, E.C.

**MIDLANDS**.—Important Chemist's Business for disposal on executors' instructions; prominent position; large shop; old established; returns £2,250; has done and can do considerably more; long lease at rental of £100 per annum; should be of considerable interest to multiple concerns; price £1,700. Fuller details will be furnished by accountants on receipt of references. 342/6, Office of this Paper.

**YORKSHIRE**.—Old-established Chemist's Business for disposal; Kodak Agency, Wine Licence (Medicated); unopposed; main road; growing district; good living accommodation; returns average £15 per week; N.H.I. 200 per month; neglected; rent 25s. per week; price £250; stock at valuation. 342/31, Office of this Paper.

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**FOR SALE**, Business of Chemist and Druggist; includes stock-in-trade and modern fittings and fixtures; position good; reasonable rental. Apply Albert Loveridge, Incorporated Accountant, 40 Hoghton Street, Southport.

**HAIRDRESSERS'** Sundriesmen (Manufacturers), going concern; good connection, for Sale; stock, book debts, etc.; reasonable offer entertained. R. B. Moyse, Chartered Accountant, Receiver, 20 Essex Street, Strand. Tel. Bar 5319.

**£50**, ALL at, for quick transfer. Established Drug Stores of rooms (3 large and kitchen); owner taking up appointment and must dispose of at once; this is an exceptional bargain. Call only (letters not answered) in first instance at 407 Caledonian Road, N.7, for particulars.

**£130** CASH for immediate sale, small Chemist's Business or Drug Store with plenty of scope; no near opposition; Bayswater district; with or without living accommodation; General Retail, Dispensing, Photography. Inquiries to 343/9, Office of this Paper.

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**CASH** waiting for one or two Pharmacies. Details and low price in very strict confidence, or any other Drug Business or scheme entertained. E. J. Bates, Chemist, Florence Road Post Office, Acocks Green, Birmingham.

**CHEMIST'S** Business wanted in Gloucestershire, Glamorgan, Monmouthshire, Somersetshire, Wiltshire, or neighbouring counties; turnover about £30 per week; overhead charges proportionate. Send full particulars of reasons for disposal, rent, rates, length of lease, opposition, population in district, agencies, and price for cash to 342/4, Office of this Paper.

**PRIVATE** Chemist with capital up to £3,000 is desirous of negotiating immediately for the purchase of a sound Business in any part of England; an immediate sale of the right size and type of business can be arranged, provided the earning capacity is not less than £500 per annum. Owners who are prepared to entertain selling are invited to communicate privately, and in strict confidence, with Ernest J. George, Sentinel House, Southampton Row, London, W.C.1, who will be pleased to effect an immediate introduction, direct or otherwise as desired.

**WANTED**, at once; Light Retail Business in good-class district with at least £600 net profit per annum; also Partnership in good-class business in Southern County, Surrey preferably; and lastly good-class Business in London, W., S.W., or N.W., where Tube Station gives easy access to West End. Fair prices will be paid for all the foregoing propositions. Apply Orridge & Co., 56 Ludgate Hill, E.C.

### AGENCIES.

**SOUTH AFRICA AND RHODESIA**.—Correspondence is invited from first-class British houses seeking suitable Agent or Representative or desiring change by British Pharmacist with established connection with Wholesale and Retail Drug Trade, Hospitals, Doctors, Dentists; first-class references provided; advertiser able to arrange distribution, sampling, circularisations; British and Colonial experience in representative work. 341/26, Office of this Paper.

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**CHEMISTS**, Druggists, etc., seeking new premises: Splendid opportunity occurs in shopping parade on new estate of 2,000 houses; one shop only left; no opposition; ample living accommodation; £1,350 freehold. Particulars from D. Salmon, Estate Office, Hampden Hill Parade, Romford. Phone 1465/1496.

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**L**IVERPOOL (near).—Assistant, not manager, wanted; married; self-contained house over shop; good Dispenser, willing and obliging Counter-hand; permanent. Letters unanswered in 7 days respectfully declined. 343/17, Office of this Paper.

**L**ONDON, E.—Junior Assistant wanted immediately; must be accurate Dispenser and have had good all-round experience. Apply, stating age, experience, and salary required, to Tate, Francis & Co., Ltd., 37 Roman Road, Bow, E.3.

**L**ONDON, S.E.1.—Junior Assistant, not over 25, for working-class business and large N.H.I. State when at liberty with full particulars to 342/29, Office of this Paper.

**L**ONDON, W.10.—Male Assistant, qualified, required second week in January; permanency; all-round experience essential; small salary to commence. Particulars and salary required to 342/37, Office of this Paper.

**L**ONDON.—Assistant, male, unqualified, age 20-30, required; outdoors; must have had good all-round experience in Dispensing and Counter. Sandberg, Chemist, 22 Regent's Parade, North Finchley, N.12.

**A**SSISTANT required at once, either qualified or unqualified. Apply, stating age, experience, references and salary required. Full particulars to 342/33, Office of this Paper.

**L**ADY Assistant; unqualified; must have good Counter experience; good appearance and pleasant manners with customers; little Dispensing. Apply personally, Alter, 13 Park Parade, North Finchley. Hillside 0785.

**L**ADY Assistant, unqualified, of mature experience, for East Sussex seaside resort; pharmacy trained, with expert knowledge of Toilets and Window-dressing. 343/7, Office of this Paper.

**M**ANAGER required shortly for high-class Dispensing business near London; living accommodation provided. Send full particulars, age, experience, references and salary required, and state when free, to "H. F. S." Savory & Moore, 61 Welbeck Street, London.

**P**HARMACIST-OPTICIAN required to manage branch establishment in Buckinghamshire; living accommodation provided. Write, giving full particulars, age, height, experience, salary required, and when disengaged, to "H. F. S." Savory & Moore, Ltd., 61 Welbeck Street, London.

**R**EGISTERED Chemist (male), married, required at once, to live on premises. State experience, with recent references, salary, etc., and when at liberty, to T. & W. & W. Southall, 17 Bull Street, Birmingham.

**T**IMOTHY WHITES require a really capable qualified Manager, not under 25 years of age; applicants must be energetic and possess ability; good prospects and free removal. Apply, stating experience, age, salary required, and full particulars, to Assistant Secretary, Timothy Whites (1928), Ltd., Portsmouth.

**W**ANTED, at once, qualified young lady for temporary position in good-class pharmacy. Letters not answered within seven days respectfully declined. Apply, J. Noble, 20 Woodcote Road, Wallington, Surrey.

**Y**OUNG lady Assistant or Improver. Apply, with full particulars of experience, also stating age, height, salary required, and when at liberty, to Marshalls, Chemists, 78 High Street, Kingsland, London, E.8.

**PHOTOGRAPHS, TESTIMONIALS, &c.**

When answering advertisements in this section applicants are strongly advised not to send (unless specially requested) ORIGINAL TESTIMONIALS or VALUABLE PHOTOGRAPHS. As can be readily understood, when an advertiser receives from 60 to 100 replies the task of returning photographs, testimonials, &c., is one of some difficulty.

**WHOLESALE.**

**S**COTLAND.—To acknowledge with thanks the numerous applications to advertisement 213/645 of December 17 for probable vacancy for reputable firm's Chemists' Confectionery, and to notify applicants that the position is now filled.

**S**COTLAND.—Required for SwanDown Toilet Preparations, capable, energetic Representative with established connection amongst Stores, Chemists and Hairdressers; must be resident in chief area and able to supervise sales promotion plans; own car essential; salary and commission, plus expenses. Write, stating full details, Henry Tetlow Co., 61 Eagle Street, London, W.C.2.

**E**NERGETIC Representatives in principal centres of England and Wales to call on Retail and Wholesale Chemists; Proprietary advertised goods; salary and commission; excellent prospects for right men. Give full details, age, experience, etc., in confidence, 214/661, Office of this Paper.

**P**ROCESS Worker required in Laboratory by Wholesale London Druggist used to Steam Laboratory and the manufacture of Ointments and Galenicals. Apply 214/664, Office of this Paper.

**Q**UALIFIED Chemist required as Medical Representative to call on Doctors, Hospitals, Chemists, etc.; willing to travel outside London when necessary. Write, stating experience, age and salary required, to 214/662, Office of this Paper.

**T**OILET PREPARATIONS.—Good Working Forewoman, with sound experience, capable of taking entire charge of staff of packers and labellers; first-class references essential; age about 30 to 40; married woman preferred. Apply, by letter only, with full particulars of experience, age, wages, etc., 214/656, Office of this Paper.

**COLONIAL, INDIAN AND FOREIGN.**

**M**ALAY STATES.—Junior Assistant (qualified) required; must have Optical qualification and experience as well; single; age about 25 years; 3 years' agreement; second class passage out and home; Scot preferred; excellent prospects for right man. Apply, by letter only, to Dakin Bros., Ltd., 82 Middlesex Street, E.1, with copies of references.

**SITUATIONS WANTED.****RETAIL (HOME).**

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**A.A.A.A.A.**—FIRST-CLASS Pharmacist desires position anywhere; 23; Square trained; 4 years' experience; undeniable references; honest, hard working; disengaged. Hatfield, 25 Queen Street, Leigh, Lancs.

**A.A.A.A.**—QUALIFIED, young, desires position; Management preferred; sound knowledge and experience all branches, London and provinces; good references; interview appreciated. Hitchin, 52 Guilford Street, W.C.1.

**A.A.A.A.**—QUALIFIED man; 6 ft.; experience; education; anywhere; immediately. 343/16, Office of this Paper.

**A.A.A.**—QUALIFIED; Manager or Assistant; excellent Window-dresser, Dispenser (Square trained) and Counterman; smart appearance; tall; highest references; disengaged. "Chemist," 60 Pennard Road, Shepherd's Bush, W.12.

**A.A.A.**—QUALIFIED, age 25, of good address, used to good-class pharmacies; conscientious; Dispensing, Counter, Window-dressing, Photography; slight knowledge of Optics. "M.P.S.," 96 Bensham Manor Road, Thornton Heath.

**A.A.A.**—QUALIFIED; 27; excellent experience in all branches. 3 St. James' Mansions, N.W.6.

**A.A.**—ADVERTISER; unqualified; tall; thoroughly experienced; abstainer; well recommended; permanency or part time; disengaged. Alexander, 189 Southampton Street, S.E.5.

**A.A.**—ASSISTANT or part time; London and provincial experience; Dispensing, Counter, Windows, Prescribing. "H.," "Cwmiar," Llanybyther, Carmarthenshire.

**A.**—QUALIFIED, 24, requires post as Manager or Senior; anywhere; experienced; Photography, Dispensing, Counter, etc.; excellent references. J. Benn, 13 Mayon Avenue, Blackpool.

**A.**—THOROUGHLY reliable, unqualified Assistant or Manager; up-to-date, all-round ability; 7 years last situation as manager; now disengaged through death of proprietor; age 38; married; London or near. "Advertiser," 39 Villa Road, Brixton.

**A**CAPABLE, all-round Assistant desires permanency in good-class pharmacy; first-class references and experience; South or South-West Counties preferred. "W. J.," 44 Glad Road, Strand, Glos.

**A**CAPABLE unqualified male Assistant, 28, single, seeks situation; disengaged; experienced Dispenser, Display Counterman; excellent references; London or suburbs. "Statim," 342/9, Office of this Paper.

**A**PHARMACIST-OPTICIAN, M.P.S., F.B.O.A., F.I.O.O.; 15 years' managerial experience, London, provincial; married; abstainer; scope for initiative; keen, tactful; competent business builder; ever Prescriber; expert Windows; intimate knowledge Photographic, Agricultural; own Optical equipment; unimpeachable references; permanency; moderate salary, house; free early January. "Pharmacist," 44 Syon Lane, Isleworth, London.

**A**S Locum (any district), part time London area; qualified; thoroughly experienced; good Dispenser; disengaged. "Pharmacist," 343/13, Office of this Paper.

**A**SSISTANT; unqualified; 30; Part I; good all-round experience; 5 years present situation; free any time. "J.," 90 Nicholls Square, E.2.

**B**RIGHAMPTON OR NEAR.—Lady Dispenser desires post (Hall); good all-round experience; excellent references. 8 Prestonville Road, Brighton.

**E**XPERIENCED lady Pharmacist (26), disengaged for Locum or permanency; Hospital or Retail. 8 Kerrison Road, W.5. Ealing 4063.

**J**UNIOR, 22, ½ years' Provincial, London and College experience; first-class references. Hawley, 59 Bedford Road, Clapham, S.W.4.

**L**OCUM or Emergency Relief; disengaged; thoroughly experienced; competent; any period, distance or position. "Chemicus," 56 Rudloe Road, Balham, S.W.12.

**L**OCUM or temporary; qualified; long experience. "Chemist," 28 Fulham Park Gardens, London, S.W.6.

**M.P.S.**, 25; experienced; London or provinces; disengaged; permanency preferred. "T. B.," 27 Torre Square, Torquay.

**M**R. A. ATKINSON, Ph.C., Chemist, Harrogate, unhesitatingly recommends Mr. Raymond Craven, his late Assistant, who has given him faithful service for 3½ years; qualified. Apply Craven, 3 Whincup Avenue, Knaresborough.

**M**RS. J. REES, M.P.S., of J. & D. G. Rees, Chemists, St. Thomas, Swansea, wishes to recommend his late apprentice, W. J. Harrison (20), who has had 3½ years' general experience as Junior Assistant; London or Bristol preferred; disengaged from January 1. W. J. Harrison, c/o above address.

**P**HARMACIST, age 25, fond of hard work; registered Locum, National Pharmaceutical Union; 8 years' experience with Messrs. Boots, also private chemist's experience; sound character and good undeniably references; London, provincial and country experience; Manager or Assistant; permanent or temporary; now free; moderate salary. R. Vincent Owen, Victoria House, Caernarvon.

**Q**UALIFIED; middle-aged; supervise, part time, or any capacity; disengaged; references; moderate salary. "S.," 32 Steyne Gardens, Worthing.

**Q**UALIFIED, available for relief or regular engagement; experienced; reliable; trustworthy; now disengaged. Harris, 6 Guthrie Street, S.W.3.

**Q**UALIFIED lady, 25, desires position in London; good all-round experience Dispensing, Counter, Window-dressing. "Pharmacist," 503 Commercial Road, E.1.

**Q**UALIFIED Pharmacist-Optician; disengaged; long managing experience London, City, Suburbs; last position 14 years; thorough knowledge all branches; Locum Managership preferred. "Optometrist," 21 Kidbrooke Lane, Eltham, S.E.9.

**Q**UALIFIED; 40; good experience; references; town or country; used to management. Gibbs, The Cottage, Hampton, Evesham.

**Q**UALIFIED Chemist-Optician, 28, registered J.C.Q.O., desires change; Managership or first Assistant; good reference and experience, all branches; abstainer and trustworthy. "Chemist," 25 Brundrett Road, Chorlton-upon-Hardy, Manchester.

**Q**UALIFIED Manager, 27, completing 4 months' sickness Locum on January 7, will need similar post, or preferably permanency; all-round experience; succession entertained. Phillips, c/o Thomas, Chemist, Neyland, Pembs.

**R**ELIABLE Pharmacist (middle-aged); high-class West-End and provincial experience; excellent references; good Dispenser; salary moderate. "M.P.S.," 343/4, Office of this Paper.

**S**MART, qualified Manager; age 31; good Dispenser; tactful Salesman; London preferred; salary £4 4s.; small commission; particulars and photo. 341/40, Office of this Paper.

**Y**OUNG lady; unqualified; over 3 years' experience; Dispensing, Counter; Brighton or near. Read, 40 Norman Road, Newhaven, Sussex.

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**Y**OUNG lady (unqualified) requires post with Doctor or Chemist; 5 years' experience, Dispensing; preferably London area. Crocker, 49 Denbigh Road, Willesden.

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**A**DDITIONAL line required, suitable for the largest shops and stores; excellent connection among provincial Stores and Hairdressers; strict confidence observed. "M.," Lincoln Hall Hotel, Upper Bedford Place, W.C.

**E**XPERIENCED, qualified Representative, 27, requires progressive position with established house; knowledge Therapeutics, Organotherapy; Medical Propaganda; smart appearance, personality; administrative capabilities; foreign travel accepted. "Z.," 49 Rowan Road, W.C.

**S**ALES Directories, contemplating staff re-organisation or addition to present staffs, are offered the services of a Pharmaceutically trained Representative with exceptionally unique credentials and experience; capable of representing a reputable house with dignity and efficiency, and bringing a connection of 12 years' standing in London and Home Counties. 342/38, Office of this Paper.

**T**O MANUFACTURERS.—A gentleman with Pharmaceutical qualification and sound administrative experience is just relinquishing directorship with a firm of Manufacturing Chemists offers his services to a progressive firm; present engagement terminates at the end of year. Apply 214/665, Office of this Paper.

**T**RAVELLER, popular, reliable, seeks re-engagement; Pills, Tablets, Sundries, Drugs; salary or commission; London or provinces; valuable connection. 342/7, Office of this Paper.

**W**ELL-Educated young Salesman, 28, desires post as Representative with good house; salary and commission; excellent references; car. 343/8, Office of this Paper.

**3,000** CHEMISTS' connection in London and South-Western Counties to good house; 400 new accounts in 12 months; salesmanship and propaganda a speciality; car; salary and expenses basis. "Successful," P.C.B. 59/16, Office of this Paper.

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**C**HEMISTS' FITTINGS.—We hold an immense stock of Drug Fittings, Dispensing Screens, Glass Fronted Counters, Perfumery Cases, Nests of Drawers, Wall Cases, Silent Salesmen, Upright and Flat Counter Cases, Plate-glass Counters, Cash Tills, Display Stands and Glass Shelves, etc., ready for immediate delivery at competitive prices. Write or call for List. F. MAUND & E. BERG (SHOWCASES), LTD., 175/9 and 336 Old Street, London, E.C.1.

**C**HEMISTS' Fittings, direct from manufacturer; soundly constructed in oak and mahogany; 8 ft. Drug Run, £18; 6 ft. Dispensing Screen, £14; 6 ft. Showcase Fronted Counter, £8 5s.; 6 ft. Wall Case, £11; 6 ft. Glass Counter, £8 15s.; Counter Case, 30 x 24 x 18, £2 5s., etc. Send now for photographs, or call and inspect. MYERS, Complete Chemist Fitters, 134 Kingsland Road, E.2, near Shoreditch Church. Bishopsgate 2524.

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